City of Paterson
Operation and Maintenance
Plan and Manual

For the
Combined Sewer System

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Operation and Maintenance Plan and Manual

I. GENERAL 3
I.A. MISSION STATEMENT 3
I.B. BACKROUND 3
I.C. REFERENCES and UPDATING OF THE MANUAL 9
I.D. OPERATION AND MANAGERIAL RESPONSIBILITIES 9
I.E. OPERATOR RESPONSIBILITY 9
I.F. ADMINISTRATIVE FUNCTIONS/MANAGEMENT RESPONSIBILITY 10

II. PERMITS AND STANDARDS 10

III. PERSONNEL 11
III.A GENERAL 11
III.B. STAFFING 12
III.C. ADMINISTRATIVE FUNCTIONS 12
III.D. TRAINING 14

IV. INVENTORY OF COMBINED SEWER OVERFLOWS 15
IV.A. GENERAL INFORMATION 15

V. RECORD KEEPING 18

VI. MAINTENANCE 21
VI.A. GENERAL 21
VI.B. EQUIPMENT RECORD SYSTEM 22
VI.C. PLANNING AND SCHEDULING 22
VI.D. STOREROOM AND INVENTORY SYSTEM 23
VI.E. MAINTENANCE PERSONNEL 23
VI.F. COST AND BUDGETS FOR MAINTENANCE OPERATIONS 23
VI.G. HOUSEKEEPING 24

VII. INSPECTION PROCEDURES 25
VII.A. REGULATOR, TIDE GATE, COMBINED SEWER OVERFLOW PROCEDURE AND INSPECTION REPORT 25
VII.B. MANHOLE INSPECTION PROCEDURE AND INSPECTION REPORT 29
VII.C. CATCH BASIN MAINTENANCE PROCEDURE AND REPORT 35
VII.D. TV INSPECTION PROCEDURE AND INSPECTION REPORT 38
VII.E. WET WEATHER OPERATING GUIDELINE AND CHECKLIST 42
VII.F. SEDIMENT REMOVAL PROCEDURE 44
VII.G. SEWER MAIN LINING PROGRAM 46
VII.H. MANHOLE REPLACEMENT/REHABILITATION PROGRAM 47
VII.I. CATCH BASIN REPLACEMENT/REHABILITATION PROGRAM 48

VIII. EMERGENCY OPERATIONS 49
VIII.A. GENERAL 49
VIII.B. OBJECTIVES 49
VIII.D. METHODS TO REDUCE SYSTEM VULNERABILITY 50
VIII.E. EMERGENCY AND SPILL REPORTING PROCEDURES 53
VIII.F. RESPONSES TO EMERGENCIES 54
VIII.F.I GENERAL 54

IX. MAINTENANCE SCHEDULES 57

X. ADMINISTRATIVE FUNCTIONS 63

XI. FISCAL MANAGEMENT 63

XII. CONTRACTOR-REPAIR WORK 63

XIII. MARKOUTS 64

Appendix A: Annual Budget
Appendix B: Financial Management System
Appendix C: A Guide to Confined Space Safety
Appendix D: Vulnerability Analysis
Appendix E: CSO General Permit
Appendix F: CSO Discharge Points Location Maps
Appendix G: List of Equipment Operations and Maintenance Manuals by Reference
Appendix H: Plates

I. GENERAL

I.A. MISSION STATEMENT

The goals of this Operation and Maintenance Manual (O & M Manual) is to set forth the guidelines and requirements to operate and maintain the combined sewer system within the City of Paterson in Passaic County, New Jersey. This includes protection of public health, the environment, and the prevention of unnecessary property damage, while minimizing infiltration, inflow, and exfiltration and maximizing collection and conveyance of wastewater, while providing prompt response to service interruptions, while performing all duties in a safe manner and operating in a manner that complies with all laws, rules and regulations governing the operation of sanitary combined sewer collection systems in the State of New Jersey.

I.B. BACKROUND

The City of Paterson, Sewer Division operates the City's Combined Sewer Storm System which conveys the sewage and storm water within the City limits. This system is comprised of the following.

Description of Combined Sewer Facilities

The City of Paterson has a combined sewer system with thirty-two (32) combined sewer overflow (CSO) discharge points of which seven (7) are inactive and twenty-five (25) are in use. Twenty-seven (001-027) originate at regulator chambers to the PVSC trunk system, one is operated under license from PVSC while four (028-031) originate at static and mechanical regulators owned and operated by the City. Combined sewer overflow discharges occur when wastewater flows within the combined sewer system exceed the capacity of the regulator, or there is a blockage at the regulator or downstream combined sewer. The City of Paterson owns and operates the combined sewer system including all CSO discharge pipes, however, the Passaic Valley Sewerage Commissioners own and operate the regulator chambers that control flow into the PVSC trunk system and the PVSC Treatment Plant.

CSO Control Facilities

There are fifty-two (52) combined sewer overflow control facilities and thirty-two (32) combined sewer overflow discharge points in the City of Paterson operating under the City NJPDES Permit. CSO-032 is owned by the PVSC and operated under license by the City. While all CSO discharge pipes excepting CSO-032 are owned and operated by the City, only about half of the CSO control facilities are owned and operated by the City. Twenty-eight (28) of the combined sewer overflow discharge pipes are controlled by regulators owned and operated by the Passaic Valley Sewerage Commissioners (PVSC). The remaining four (4) CSO discharge points operate entirely independent of the PVSC system. These CSO's including the twenty-five (25) control facilities are operated and maintained by the City of Paterson. The location of the City owned and operated control facilities and their associated discharge points are illustrated on Plates 1 thru 4 located in the rear of this manual. All of the CSO control facilities located in the City of Paterson and the responsible agency for each are designated on Table 1.

S.U.M. PARK 2 REGULATORS:

The S.U.M. Park 2 Overflow is a 116-inch circular reinforced concrete pipe, which conveys the flow from nine (9) regulators within the Hillcrest Section of the City. This is the first of the overflows (PVSC or City of Paterson) into the Passaic River. A schematic of each control facility flows immediately.

REGULATOR #	LOCATION	DESCRIPTION
A1-1	Westside Park	Side overflow weir with 36" diameter RCP pipes in and out, the overflow in a 36" diameter pipe to a 66" diameter sewer.
A1-2	Union Boulevard	Plugged.
A1-3	Sherwood Avenue	Side overflow weir with 30" diameter RCP pipes in and out, the overflow is a 24" diameter VCP to the 90" diameter storm line.
A1-4	Linwood Avenue	Side overflow weir at the bench with 18" diameter VCP pipes in and out, the overflow is a 12" diameter VCP to the 90" diameter storm line.
A1-5	Chamberlain Avenue	Side overflow weir at the bench with 18" and 24" diameter VCP in and 18" out, the overflow is an 18" diameter pipe into a 30" diameter storm sewer.
A1-6	Crosby Avenue	Side overflow weir at the bench, 12" Diameter ACP in and out with a 12" ACP to the 90" diameter storm sewer.
A1-7	Emerson Avenue	Side overflow weir at the bench, 12" diameter VC pipes in and out with a 12" diameter VC pipe overflow to the 60" diameter storm sewer.
A1-8	Maitland Avenue	Side overflow weir at the bench, there are a 10" and a 12" diameter VC pipes into the manhole with a 12" diameter overflow to the 60" diameter RC pipe storm sewer.
A1-9	Richmond Avenue	This regulator is a side overflow weir at the bench, the 12" diameter VC pipe overflows to another 12" diameter VC pipe connecting to the 36" diameter RC pipe storm sewer.

LOOP ROAD REGULATORS:

The next City of Paterson overflow is the Loop Road overflow. This overflow consists of two (2) sets of two (2) diffusers each of which is fed by a 120-inch circular reinforced concrete pipe. The drainage area is the Downtown section of the City and six (6) regulators, all of which are mechanical, divert stormwater flow to this overflow. A schematic of each control facility follows immediately.

REGULATOR #	LOCATION	DESCRIPTION
EF-1	River Street	An incoming 48 in. circular RC pipe is regulated by a 7-1/2 in. high x 12-3/8 in. wide Brown & Brown, Inc. sluice gate. The outlet sewer is a 15 in. circular VC pipe. CSO 029A discharges in conjunction with EF-1.
EF-2	Van Houten Street	A Brown & Brown, Inc. 7-1/2 in. high x 9-3/4 in. wide regulator controls the combined flow from an 18 in. circular VC pipe. The outgoing sewer is a circular 15 in. VC pipe. The overflow is a circular 36 in. RC pipe.
EF-3	Ellison Street	A Brown & Brown, Inc. 7-1/2 inc. high x 15-3/4 in. wide regulator controls the flow from a 36 in. Circular VC pipe for combined sewage flow. The outlet pipe is an 18 in. circular VC pipe and the overflow is 48 in. circular RC pipe.
EF-4	Market Street	An incoming 48 in. circular RC combined Sewer is regulated by a 12 inc. wide x 12 in. high Brown & Brown, Inc. mechanism. Normal flow exits the chamber through an 18 in. circular VC pipe, whereas combined storm flow overflows through a 48 in. circular RC pipe.
EF-5	Market Street	A 5 in. high x 9-1/4 in. wide Brown & Brown, Inc. mechanism regulates the combined sewage flow from an 18 in. circular VC pipe. The outlet pipe is a 12 in. circular VC pipe, and the overflow pipe is a circular RC pipe 30 in. in diameter.
EF-6	Grand Street	The incoming combined sewage flows in a 77 in. high x 121 in. wide concrete box culvert, which is regulated by a 16 in. high x 27-1/2 in. wide Brown & Brown, Inc. regulator to a 36 in. circular RC pipe. Overflows discharge into the 120 in. circular RC pipe of the Loop Road stormwater facility.

NINETEENTH AVENUE REGULATOR:

At the intersection of Nineteenth Avenue and Vreeland Avenue is a side overflow weir regulator. A 72-inch circular brick sewer diverts flows from storm events into a 90-inch diameter circular reinforced concrete pipe. A schematic of each control facility follows immediately.

REGULATOR #	LOCATION	DESCRIPTION
V2-1	19th Avenue	This is a 20 linear foot (LF) side overflow Weir from a 72" diameter brick sewer. The overflow conduit is a 90" diameter RC pipe.

ROUTE 20 BYPASS:

The last of the City of Paterson overflows is a 102-inch diameter circular reinforced concrete pipe, which conveys the diverted stormwater flows from nine (9) regulators in the Lakeview Section of the City. A schematic of each control facility follows immediately.

REGULATOR #	LOCATION	DESCRIPTION
V1-1	23rd Avenue	The combined sewer is a 15" diameter VC pipe in and out. The side overflow weir is 2-1/2 ft. wide with adjustable stop logs.
V1-2	22nd Avenue	The 15" diameter VC pipe overflows through a 5-foot opening over an adjustable weir into a 42" diameter RC pipe storm sewer.
V1-3	Trenton Avenue between 22nd Ave. and 21st Ave.	Two (2) – 8" diameter pipes are controlled by a side overflow weir through a 10" VC pipe to a 30" diameter storm sewer.
V1-4	Maryland Avenue	A 30" diameter combined sewer flows by a 10 ft. wide side overflow weir with adjustable stop logs. The overflow pipe is a 102 in. circular RC pipe.
V1-5	Trenton Avenue	Two (2) – 24 in. diameter VC pipes flow past a 9 ft. wide side overflow weir with adjustable stop logs. The outgoing pipe is a 30 in. diameter pipe and the overflow pipe is a 102 in. circular RC pipe.

V1-6	Florida Avenue	A 24 in. VC pipe passes by a 9 ft. wide Side overflow weir with adjustable stop logs. The overflow pipe is an 84 in. circular RC pipe.
V1-7	Illinois Avenue	This chamber has an 11 ft. wide side overflow weir with adjustable stop logs. The combined sewer is 24 in. circular VC pipe in and out of the chamber and the overflow pipe is an 84 in. circular RC pipe.
V1-8	Michigan Avenue	An 8-1/2 ft. wide side overflow weir with adjustable stop logs regulates the flow from a 24 in. circular combined sewer. The overflow outlet pipe is a 60 in. circular RC pipe.
V1-9	Alabama Avenue	An 11 ft. long side overflow weir with a wooden stop log regulates flows from a 30 in. wide x 42 in. high brick sewer. The outgoing sewer is a 36 in. circular RC pipe. The overflow outlet is a 54 in. circular RC pipe.

CSO Discharge Points

There are thirty-two (32) discharge points within the City of Paterson, which are owned and/or operated by the City. Table 2 lists each of the CSO outfalls within the City of Paterson while the location is illustrated on an overall sewer map of the City located in the rear of this manual.

Equipment

Current equipment used in the operation and maintenance of the City of Paterson combined sewer system includes:

a. A catch basin truck and clam shell bucket for cleaning; and
b. Three high pressure jet/vactor truck for cleaning.
.

This equipment should be maintained as suggested and required by the manufacturer.

Catch Basins

The City of Paterson has and maintains catch basins within the City such that each basin is cleaned a minimum of once per year. In addition, key basins, which have been shown to require additional cleaning, are cleaned more often.

Treatment Facilities

The Solids/Floatables Netting System servicing the storm water collection system located on Wait Street between 5th Avenue and River Street is operated and maintained by the Sewer Division. See appendix C for detailed O&M Instructions.

The Sewer Division provides operation and maintenance of all the sewer regulators and solids/floatables control facilities within its service area and the service laterals from the main to the curbline. The Sewer Division does not maintain the laterals/service connections from the curbline to the structure. Any maintenance repairs along with their associated costs are the responsibility of the property owner connected to the specified portion of lateral.

I.C. REFERENCES and UPDATING OF THE MANUAL

An O&M manual is a working document. As conditions change within the system, so, too, should these changes be incorporated into the O&M Manual. This manual contains the names, addresses and phone numbers of the manufacturers and suppliers of the various equipment used in the sewer system. It contains emergency and maintenance procedures. As this information changes, this manual should be updated. It is suggested that, at a minimum. A yearly review of this manual is made to reflect existing conditions of the sewer system.

I.D. OPERATION AND MANAGERIAL RESPONSIBILITIES

The effectiveness of a wastewater system is dependent upon the skill and performance of the operators and maintenance personnel. A facility can be designed to provide the most efficient operation possible, but it is the individual operator who actually makes a system perform up to its capability. The importance of skilled operators cannot be overemphasized.

I.E. OPERATOR RESPONSIBILITY

The following is a suggested list of the operational personnel's responsibilities:

- Know proper normal and emergency operational procedures.
- Operate the system effectively and efficiently.
- Keep continuously informed of the best operating and maintenance practices.
- Participate in short courses and schools when available.
- Subscribe to and regularly read several of the periodicals related to municipal wastewater treatment.
- Maintain accurate and neat system operational and maintenance records.
- Use sound judgment in the expenditure of operating funds.
- Keep management advised of potential major problems in operation and maintenance of the system.
- Assist supervisors in preparing an adequate budget
- Be aware of the safety hazards connected with interceptor system inspection and maintenance.
- Be familiar with personnel and public relations techniques, and be prepared to discuss overall system operation with visitors.
- Know expected efficiencies of all equipment and how to monitor these units.
- Be familiar with Local, State, and Federal laws which may apply to the overall system for conveying wastewater.
- Supervising, instructing, and training subordinate personnel in operating theory and practice, maintenance, safety, and record keeping.

I.F. ADMINISTRATIVE FUNCTIONS/MANAGEMENT RESPONSIBILITY

While the effectiveness and efficiency of the sewer system is dependent on the operator, management of the facilities is the responsibility of the City. It takes both the operator and the administrative staff working together to operate the system in the most efficient and cost-effective manner.

The following is a suggested list of management responsibilities:

- Maintain efficient system operation and maintenance.
- Maintain adequate system operational and management records.
- Establish staff requirements, prepare job descriptions, develop organizational charts and assign personnel.
- Provide operational personnel with; efficient funds to properly operate and maintain the facility.
- Ensure operational personnel are paid salary commensurate with their level of responsibility.
- Provide good working conditions, safety equipment and proper tools for the operating and maintenance personnel.
- Establish a harmonious relationship with personnel.
- Provide personnel with job security and career ladder.
- Establish operations and maintenance training program.
- Provide incentives for employees.
- Motivate personnel to achieve maximum efficiency of equipment through proper operation and maintenance procedures.
- Make employees aware of importance of proper equipment performance.
- Make periodic inspections of the regulators and solids and floatables control facilities to discuss mutual problems with the personnel and to observe operation and maintenance practices.
- Create an atmosphere that will make Sewer Division personnel feel that they can bring all problems to management's attention.
- Maintain good public relations.
- Prepare budgets and reports.
- Plan for future facility needs.

II. PERMITS AND STANDARDS

The City of Paterson operates its combined sewer system as authorized by the NJ Department of Environmental Protection CSO-Combined Sewer System (GP) NJPDES Permit No. NJ0105023 (see Appendix G)

III. PERSONNEL

III. A GENERAL

The most important factor in any good operations and maintenance program is the People involved. It is essential to pay attention to the needs of these people. These needs include adequate training, proper tools, good working surroundings, competitive salaries and fringe benefits, and adequate opportunity for advancement in both salary and degree of responsibility.

The operation and maintenance of municipal wastewater systems is a demanding and exacting occupation. It requires that personnel have the technical know-how and competence to properly provide the services that are intended of the facilities. Principally, it is necessary for the operation and maintenance personnel to assure continuous service at the least cost to the City's residents. The equipment at the facilities should be operated so that they perform the functions for which they were intended.

The combined sewer system is operated and maintained by the City of Paterson, Sewer Division personnel. All facilities will be inspected and maintained regularly in accordance with the procedures in this Operation and Maintenance Manual.

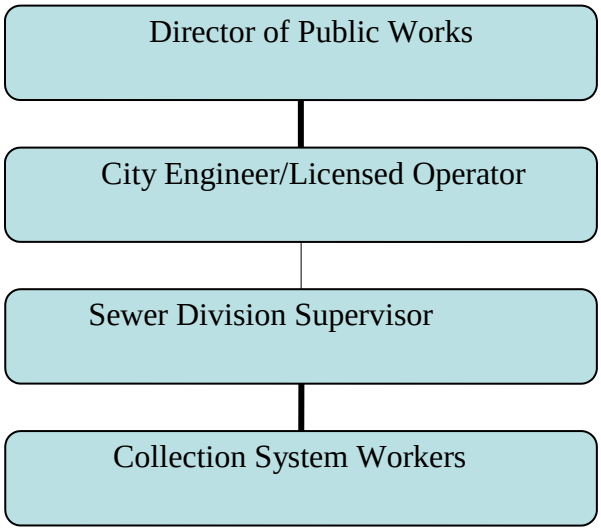
The ability of the facilities to meet the design objectives depends upon the competence of the people who administer, operate, and maintain them. The facilities' management should regularly investigate the performance standards of maintenance labor and use of maintenance manpower. Such investigation will improve the efficiency of their maintenance personnel. Performance usually improves when a minimum level of acceptable work is established and when the activities of the labor force are planned and scheduled for maximum efficiency.

The functions and performance of all personnel are subject to continuous review and appraisal. The organization chart provides the framework within which this review and appraisal can be made and within which the required functions can be organized and accomplished. Any organization, however, is in a constant state of change; new needs are met, increased competence of the staff is utilized, and continuously increasing efficiency is promoted.

Staffing requirements for the proper operation of the City of Paterson Combined Sewer System is an important consideration in administrative planning. Regardless of the care which goes into the selection of an equipment record system or work order system, it is the facilities operation & maintenance staff who are ultimately responsible for ensuring the operation & maintenance management system functions properly.

III. B. STAFFING

The sewer utility staff which is designated to the O & M Plan and Manual is the following:



The staff for the Sewer Division for the Fiscal Year 2013/2014 is as follows:

Position	Total Staff
Director of Public Works	One
City Engineer/Licensed Operator	Two
Sewer Division Supervisor	One
Collection System Workers	Nine

Vehicles/Equipment used to maintain the components of the sewer system are:

1. Supervisor vehicle
2. Sewer Utility pickup truck
3. (2) Vactor trucks
4. Jet truck
5. (2) Clamdigger Truck
6. Small Dump Truck

III.C. ADMINISTRATIVE FUNCTIONS

Executive Management – Oversight for all operations related to the management of the system. This includes but not limited to compliance, direction of work, budgets, staffing, training, procedures, safety and other job related tasks and goals.

Human Resources – Administrative end of managing of the employees relevant to corporate responsibilities, such as wages, employee interactions, payroll, insurance, and other benefit compensation if applicable. Also responsible for the performance reviews of each employee for career development

Customer Service – Put in place to mitigate outside customer concerns, issues, and discrepancies. This includes both service and billing related.

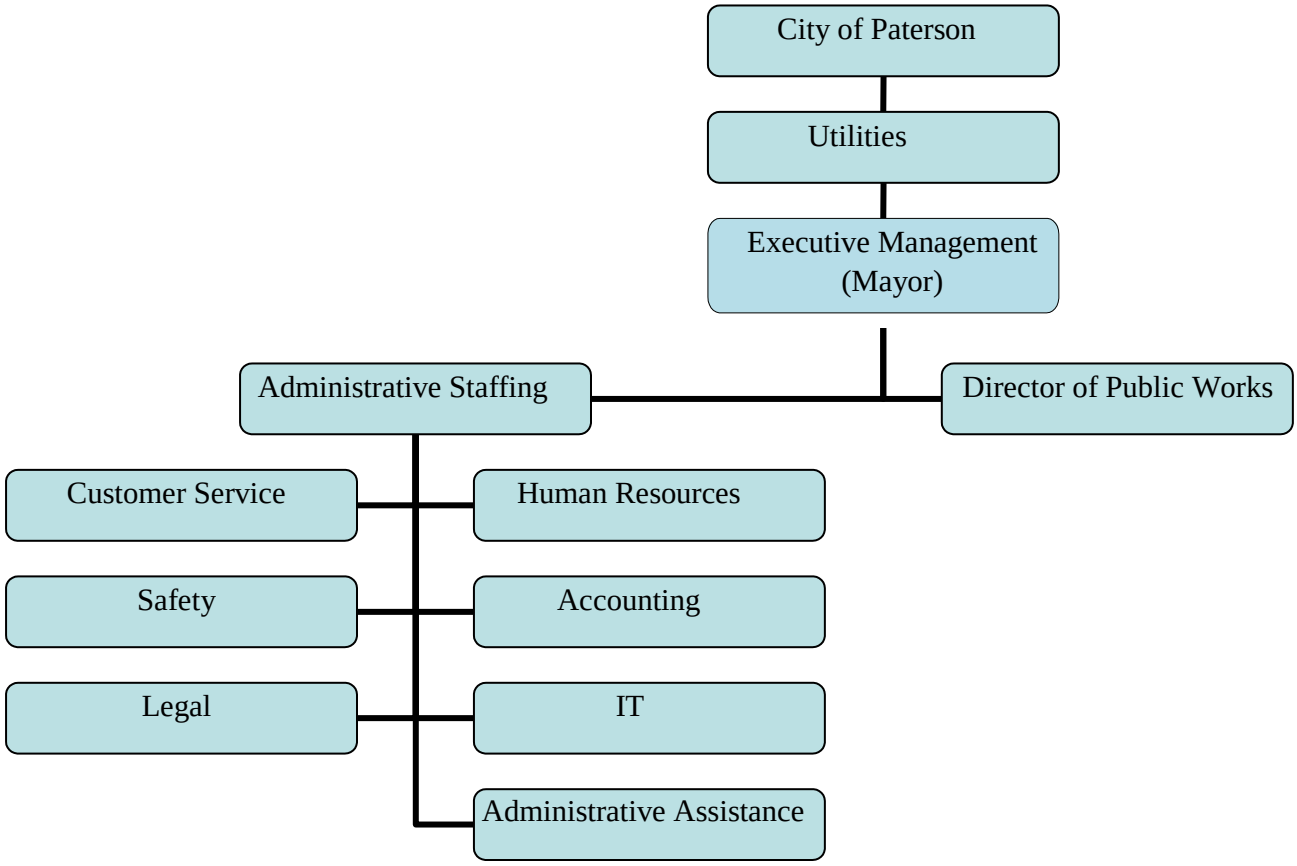
Accounting – Responsible for invoicing, accounts payable, and accounts receivable.

Safety – To ensure employee safety during work activities. This includes accident prevention, safety policy review, investigation and training.

IT – Responsible for the development and maintenance of computer infrastructure and software.

Legal – Responsible for review of all legal matters.

Administrative Assistance – Assist management with administrative functions.



III.D. TRAINING

Each of the employees directly involved in daily operations of the combined sewer system are required to meet training requirements to perform their job duties. Training requirements are set forth by the Occupational Health and Safety Administration (OSHA) and by the City of Paterson Sewer Division. The following is a list of required training, but additional training may be required or completed.

- Ergonomics
- Respiratory Protection
- Confined Spaces
- Lockout/Tagout
- Personal Protective Equipment
- Traffic/Workzone Safety
- Electrical Safety
- Fall Hazards
- Bloodborne Pathogens
- Fire Protection/Prevention
- Defensive Driving
- Hazard Communication
- Sexual Harassment
- Workplace Violence

Additional Safety Information has been listed in the Appendix C.

IV. INVENTORY OF COMBINED SEWER OVERFLOWS

IV. A. GENERAL INFORMATION

The Operation and Maintenance (O & M) Plan and Operation and Maintenance (O & M) Manual is designed to ensure that discharges occur only in response to rainfall and/or snowfall events and then only when the combined sewer system's conveyance and storage capacities are at maximum. Backflow from the receiving waters into the combined sewer system is presented by tide gates on the downstream side of all regulator chambers. All regulator chambers are owned and operated by the Passaic Valley Sewerage Commissioners.

The City of Paterson is within the Wastewater Planning area of the Passaic Valley Sewerage Commissioners. The City, which transports wastewater from the City and surrounding municipalities some twenty-three (23) miles to the PVSC Treatment Plant located in the City of Newark.

The City of Paterson has a combined sewerage system with twenty-eight (28) combined sewer overflow (CSO's) points originating at regulator chambers to the PVSC trunk system. The City of Paterson owns and operates the Combined Sewer System including the discharge pipes. However, the Passaic Valley Sewerage Commissioners own and operate the regulator chambers that control flow into the PVSC trunk system.

In addition to the twenty-eight (28) CSO's at regulator chambers, the City owns and operates four (4) CSO discharge points from storm sewers with internal overflows from the combined sewer system. These relief sewers, which were constructed by the City over the years to provide hydraulic relief to the combined sewer system, were specifically designed to prevent surcharging of the combined sewer system and street flooding. Catch basins in the area of the relief sewers were directly connected; however, to eliminate the need to divert all catch basins from the combined system to the relief system, these systems were cross connected. Catch basins remain connected to the combined sewer system, but internal overflow pipes or weirs diverted excess wastewater flow from the combined sewer system to the relief sewer.

The location of the PVSC regulators and Trunk Sewer, and CSO discharge points in the City of Paterson are illustrated in the various schematics and figures included in this manual. Overall the City of Paterson has thirty-two (32) CSO discharge points. All CSO's discharge to the Passaic River along a six-mile stretch of the River from the Great Falls to Route 80 just north of Clifton.

Discharge Serial Number	CSO Point Name (if none use the names of the street(s) nearest the CSO Point)	Name of the Receiving Waterbody
001	Curtis Place	Passaic River
002	Mulberry Street	Passaic River
003	West Broadway	Passaic River
004	Bank Street	Passaic River
005	Bridge Street	Passaic River
006	Montgomery Street	Passaic River
007	Straight Street	Passaic River
008	Franklin Street	Passaic River
009	Keen Street	Passaic River
010	Warren Street	Passaic River
011	Sixth Avenue	Passaic River
012	E. 5th St. & 5th Ave.	Passaic River
013	E. 11th Street	Passaic River
014	E. 11th St. & 4th Ave.	Passaic River
015	S.U.M. Park	Passaic River
016	Northwest Street	Passaic River
017	Arch Street	Passaic River
018	Jefferson Street	Passaic River
019	Stout Street	Passaic River
020	N. Straight Street	Passaic River
021	Bergen Street	Passaic River
022	Short Street	Passaic River
023	2nd Avenue	Passaic River
024	3rd Avenue	Passaic River
025	10th Ave. & E. 33rd St.	Passaic River
026	20th Ave.	Passaic River
027	Market Street	Passaic River
028	S.U.M. Park 2	Passaic River
029	Loop Road	Passaic River
030	19th Avenue	Passaic River
031	Route 20 Bypass	Passaic River
032	Hudson Street	Passaic River

The City is currently operating under a Judicial Consent Order under which it is constructing Netting Facilities or Mechanical Screens at all of the CSO Points which are to remain active. The balance are being directed to a Solids/Floatables Control Facility or the sewers are being separated.

A. Pipeline Common Operating/Maintenance Problems

The most common problems that are experienced in force mains and gravity sewers are blockages, breaks and possibly deposition of solids. Maintenance activities should be geared towards prevention of these problems. Two facets of the preventive maintenance programs are surveillance and cleaning.

B. Surveillance

Surveillance should consist of surface inspection and closed circuit television inspection. If manhole and internal pipe inspection is necessary, appropriate safety and testing equipment and safety practices are mandatory, such as but not limited to, sewer gas testing, personnel hoist, safety harness and air pack equipment, standby support personnel, traffic barriers, etc.

1. Closed circuit television inspection

   Internal inspection of the pipelines by closed circuit television is by far the most effective method of determining the internal condition of a sewer. Usual equipment consists of a skid with a changeable spacer plate (to adapt camera to different pipe size; a TV camera; pulley and cable assembly; and above ground support equipment. The camera is pulled between manholes while a video tape of the sewer is made.

   Internal inspection by video is a yearly maintenance item. The City routinely video inspects approximately 37000 linear feet of sewer annually.

   See the TV Inspection Procedure and Report for more information.

2. Cleaning

   Cleaning of the Gravity Sewer should be scheduled to prevent the development of blockages. Blockages may be caused by an accumulation of solidified grease, detergents or any kind of solid debris in the wastewater, held in place by some physical defect such as a root mass, a large crack or break, and offset joint, or settled object too heavy to move with the flow of wastewater. The most common causes of blockages are grease and roots.

   Frequency of cleaning should be based upon the past history of sanitary sewer performance within the City's collection system. A good preventative maintenance schedule can only be achieved with a complete set of records, indicating cause and date of all stoppages, cleaning history, and type of equipment used to perform preventative maintenance.

V. RECORD KEEPING

1. Importance of Records

   Keeping of adequate-performance records is an integral part of good system operation. It is only by making a clear and concise record of what has happened and what has been accomplished that the experiences will be of assistance in meeting future operation situations. Pertinent and complete records are a necessary aid to control procedures.

   Records also provide an excellent check on things done or to be done, especially as regards to maintenance problems. Equipment requires periodic service: some weekly and others monthly or yearly. Adequate records note when service was last performed, and when the time for service approaches; thus, a schedule can be maintained and nothing is overlooked or forgotten.

2. Information to be Included

   The extent to which record keeping should be practiced depends entirely upon its potential use. Items of importance include:

   - Annunciator Alarms
   - Operative/Inoperative Bar Screens
   - Volume of screenings removed

3. How Records Should Be Kept

   Record systems can be developed that are either simple or complex. However, they should be realistic and apply to the operating problems involved at the facility.

   The most efficient way to keep records is to plan what data is essential and useful and then prepare forms on which the information may be quickly entered in the proper spaces. Forms not only indicate the data to be obtained but provide for entering it with a minimum possibility of error or omission. Prepared forms can be used both for station operations and for laboratory determinations. To keep records without the use of well designed forms increases the labor and time involved and promotes inaccuracies. It must be remembered that inaccurate or incomplete records are worse than no records at all.

   Records should be permanent and, consequently, entries on the forms should be made with ink or with indelible pencil. Ordinary lead pencil notations smudge easily and can be too readily erased or altered; a lead pencil should never be used.

   Once made, records of any type should be carefully preserved and filed where - they can be located rapidly. This requires the establishment of a filing system that will be used and understood by everyone concerned with making and using records. The key is that filing of completed record forms must be attended to promptly and with care. A record misfiled is a record lost, and a lost record is of no value.

A pertinent question which always arises is how long should records be kept. Obviously, they should be kept as long as they may be-useful, with due consideration given to the historical value of some types of data. Same information will be of little use after a short time, while other information may be found of great value even after the passage of many years.

Any data that might be used in the future as a basis of design for system expansion or for new construction should be kept indefinitely. For some types of records, official approval is required before they can be discarded or destroyed. The fact that old records are not consulted every day in no way lessens their potential value. It is the best practice to set up a disposal schedule for each type of record maintained in order to avoid the accumulation of useless files. A decision can be made at a time a record is set up limiting the period for which it must be available.

Records must be stored in a manner to insure their permanence and safety, as well as their accessibility.

Records should be made at the time the data are obtained by the personnel directly concerned with making the particular measurements. Responsibility for proper filing, care, and use of records will rest with the supervisor or the person in charge of the system, or someone delegated by him.

4. Daily Operating Log

Proper operation and control of the combined sewer system facilities entails regular schedules in the form of shift duties to be followed by the operators; and 2) the maintenance of a daily log and data summary sheets for system operation. These logs and data sheets indicate what has happened, what has been accomplished, and the analytical results of operational tests.

5. Annual Report

The annual report is prepared in accordance with the requirements of the NJPDES permit. The report is prepared jointly by the City Engineer and the Licensed Operator, each being responsible for submitting certain data.

6. Maintenance Records

Maintenance record keeping is an absolute must in the operation of the system. An operator with a review of such records can determine which repair parts should be kept in stock. Such records may be kept on individual sheets for each piece of equipment. A record of regular periodic lubrication, inspections, cleaning and replacement of worn parts, and other data felt to be important to record should be kept on these sheets. The date when the next regular servicing of the equipment is scheduled should also appear on the card where it can easily be seen. A lubrication record for each piece of equipment should also be kept. On this record, the equipment is listed as well as instructions for lubricating, including the type of oil suggested and the frequency of lubrication. From this record the operator should be able to see when equipment should be lubricated again.

7. Operating Costs

The major categories of operating costs are labor, utilities, and supplies. Labor can be broken down into operation, administration, and maintenance. Utilities include electricity and telephone. Supplies include chemicals, cleaning materials, Maintenance supplies and other expendable items. Cost accounting for the above categories should include: intonation on unit costs, total costs, and amounts/quantities used.

The Water Pollution Control Federation Manual of Practice No. 10, "Uniform System of Accounts for Wastewater Utilities", gives the following relevant breakdown for operating expenses:

- Collection System Expenses
- User's Accounting and Collecting Expenses
- Administration and General Expenses

8. Personnel Records

Records should be kept that reflect such things as individual training, time lost due to employee sickness or accident, overtime required, and employee turnover. This information can be of great value to facility management.

9. Emergency Conditions Record

A record of emergency conditions affecting the wastewater transmission system should be maintained. These emergency conditions records might include bypass reports, and records of power failures and wastewater spills.

10. Complaints

All personnel must recognize that the City of Paterson Combined Sewer System is publicly owned, and that they are in the public service. Accordingly to earn public support and a positive image for the City of Paterson Sewer Division, all complaints must receive immediate investigation.

VI. MAINTENANCE

VI.A. GENERAL

Perhaps one of the simplest ways to avoid expensive and early replacement of equipment within the system is to maintain it correctly. Preventive maintenance is the art of doing all the little things necessary to keep equipment running smoothly. Frequent checks on the condition of equipment prevent surprises. Replacing a rough bearing early will prevent damage to the shaft and other parts which may occur if the replacement is delayed. A faithful lubrication schedule will keep parts running smoothly and free of the grit that grinds up shafts and bearings. These observations have been said many times before; however, they must be repeated and followed in order to obtain the best operating results and longest life out of the facilities provided.

Maintenance can be routine and easy to handle or it can be a frustrating series of emergencies that one can never seem to catch up to. Making maintenance routine requires planning, checking and daily attention to numerous small items which personnel might rather skip. Routine maintenance starts with a keen sense of awareness of all those things which tend to become a blur to most people because they are just part of the general surroundings. The sound of the motors and the vibration in the floor or the odor in the air are things to which personnel must remain sensitive if early signs of trouble are to be detected. For proper maintenance, system personnel should become familiar with these manuals.

The Maintenance Program should start with good housekeeping and should observe the following simple rules:

1. Keep a clean, neat, and orderly facility.
2. Establish a systematic plan for execution of daily operations.
3. Establish a routine schedule for inspection and lubrication of the system.
4. Maintain data and records for each piece of equipment, with emphasis on unusual incidents and faulty operating conditions.
5. Observe safety measures.

VI.B. EQUIPMENT RECORD SYSTEM

A good preventive maintenance program will keep the equipment in the combined sewer system in good operating condition and aid in detecting and correcting malfunctions before they develop into major problems. The method used in establishing the equipment record system will determine its usefulness. First, the method must define what preventive maintenance task must be performed, and second, the method must have a means of recording what has been done.

Each piece of equipment should have its own inspection and service card. This card should include the following if applicable:

- Original start-up data.
- Manufacturer's name, model, serial number, and special accessories.
- Manufacturer's representative name, address and phone for obtaining spare parts.
- Log for recording date of regular inspections and for recording date, cause and what was done or any emergency repairs.

Much of the above information is contained in Section 3A. It is suggested that one service card be kept in the immediate vicinity of the piece of equipment, with a copy of the same kept in the O&M manual.

VI.C. PLANNING AND SCHEDULING

The combined sewer system is a 24 hour/day, 7 day/week, 365 days/year operation. The system experiences variations in flows and maintenance work loads. Under these conditions maintenance must be planned and scheduled to avoid idle time or peak work load periods.

Maintenance planning and scheduling involves time, personnel, equipment, costs, work orders an, priorities. The size and capabilities of the staff influence the amount of work which may be accomplished. The schedule must be for preventive maintenance and minimize time required for corrective maintenance.

One approach for planning preventive maintenance is to review the maintenance and lubrication sheets provided in Sections 3A and 6 and set up ahead of time lists of operations to be done on certain dates. Items can also be entered in advance on a memo calendar pad. For the maintenance program to be effective, it must be accepted by system personnel. The equipment inspection and service record should be kept simple and instructions regarding routine work to be done should be concise and clear.

Indoor and outdoor maintenance should be scheduled according to weather, flow rate and other variables. Preventive maintenance should be scheduled in relation to the equipment manual suggestions. The optimum preventive maintenance schedule may be developed by listing all maintenance frequencies for each piece of equipment and then schedule it from the installation time.

Adjustment must be made in the schedule to save time and effort. Similar maintenance should be scheduled at the same time.

A work order should be filled out for each job. This will provide a reference for the work done, the problem, the procedure, the results and the cost. These forms help supervisors to plan work and calculate budgets. A sample Repair Order form can be found at the end of this Section.

VI.D. INVENTORY SYSTEM

A review of the equipment and manufacturer's manuals will aid in determining what spare parts should be stored. These manuals should be studied from time to time to familiarize personnel with the equipment and its proper maintenance. Then when a failure occurs, maintenance personnel are prepared to pinpoint the trouble in the shortest possible time. All spare parts that are recommended by the manufacturer should be stocked and kept in a proper, clean, well- protected stock area so that, when needed, they are available. Immediately upon using any spare parts, replacement orders should be made so that the inventory is maintained at the proper level.

VI.E. MAINTENANCE PERSONNEL

Most preventive maintenance may be performed by City personnel, even if they have only self- taught mechanical knowledge. However, some preventive maintenance and most corrective maintenance will require special training or require an outside contractor. The equipment must be repaired quickly and properly. Many pieces of equipment have a warranty period and unqualified tampering will nullify this warranty. All warranty information should be filed until it expires. Untrained personnel should assist and learn from outside mechanical contractors and vendor personnel in order to be prepared for the next maintenance or breakdown task. Specialized mechanics may be found by calling the manufacturer or factory representative who normally has available maintenance personnel.

VI.F. COST AND BUDGETS FOR MAINTENANCE OPERATIONS

The cost of preventive and corrective maintenance and major repairs and alterations are a major item in the yearly operating budget for the system. An adequate record of all maintenance costs, both in-house and hired work, plus the costs from the spare parts stockpile should be kept. This will assist in the preparation of the next year's budget.

A maintenance log should be kept and updated for each minor or major job. It should contain such items as work classification, number of hours worked, type of job, name and number of equipment, parts or supplies required, purchase order number, receipt, and total cost. These records should also be kept as maintenance history records. By checking the number and type of maintenance performed on a piece of equipment, personnel may determine when it s time for replacement.

VI.G. HOUSEKEEPING

All equipment in buildings should be well painted, the grass cut, shrubbery trimmed, and unsightly containers removed. This not only implants pride in City personnel, but also will have a pleasing effect on Local, State and Federal authorities who will visit the facilities to assess system operation.

Building maintenance is desirable on a regular schedule. Painting of structures, inside and outside, should be done before paint begins to peel. If peeling occurs, the surface should be cleaned and sanded before painting to remove oily dust film. If sanding is not required, exterior surfaces should be brushed before painting. Plumbing and lighting fixtures need attention on some regular basis. Light bulbs should be replaced when they burn out, and leaky plumbing fixtures should be repaired whenever a leak develops.

Housekeeping is a normal operation function, but whenever maintenance is performed, particularly dismantling and overhaul, cleanup after the maintenance activity is necessary. All tools should be placed in their proper location.

Trash should not be allowed to accumulate; floors should be swept or mopped as often as necessary; equipment should be wiped down to prevent the accumulation of dust. All tools should be kept in a proper and accessible place on a tool board, in tool racks, or in tool boxes. Safety and first-aid equipment and supplies should be stored in an easily accessible place and should be in usable condition.

Regular inspection and performance of maintenance activities are required for building structures and plumbing and electrical fixtures, as well as all equipment and appurtenances housed in the structures. In short, maintenance efforts are necessary equipment, controls (automatic and manual), piping and valves, sumps and sump pumps, standby equipment, and all other equipment and appurtenances.

The principal maintenance procedure required for piping is surface protection. At annual intervals, check for conditions of painted surface. Paint as necessary. Use a glossy paint that resists moisture condensation. The color of the piping should not be altered from the original.

All equipment that serve on a standby basis should be operated at regular intervals, and should be maintained on the same schedule as operating equipment.

Sump pumps should be cleaned at weekly or monthly intervals depending on the accumulation of debris or dirt.

VII. INSPECTION PROCEDURES

a. Regulator, Tide Gate, Combined Sewer Overflow Inspection Procedure and Report

b. Manhole Inspection Procedure and Report

c. Catch Basin Maintenance Procedure and Report

d. Ground Level Forcemain Inspection Procedure and Report

e. TV Inspection Procedure and Report

f. Wet Weather Operating Guideline and Checklist

g. Interceptor Sewer Procedure

VII.A. REGULATOR, TIDE GATE, COMBINED SEWER OVERFLOW PROCEDURE AND INSPECTION REPORT

Part 1: Introduction – Purpose

The purpose of this procedure is to set forth the guidelines for completing inspections on the tide gates, diversion chambers, and combined sewer outfalls (CSO) in the Combined Sewer System of Paterson. The intent of this procedure is to visually inspect, and identify potential issues relating to the tide gates, diversion chambers, and combined sewer outfalls of the Paterson sewer system.

This procedure will define the inspection of the tide gates, diversion chambers, and combined sewer outfalls. All inspection reports must be filled out in a neat, orderly, concise, and informative manner. Written notes that are a part of the report are to contain details relative to the inspection. Any questions regarding this document or the completion of a Tide Gate, Regulator Combined Sewer Outfall and Solids/Floatables Facility Inspection Report must be directed to a supervisor for clarification.

Part 2: Definitions

Regulator Chambers

The regulator chambers are a critical part of the City of Paterson sewer system. During a rain/wet weather event, the flows of the system are increased due to storm water runoff. This additional flow can quickly reach the capacity of the underground piping system. The regulator chambers take the amount of flow that is over the system's capacity and directs it to an outfall located on the Passaic River.

This overflow of the system is not permitted in dry weather. Therefore, the regulator chambers need to be inspected before and after rain/wet weather events, and during periods of dry weather. There are 32 regulator chambers within the Paterson sewer system.

Combined Sewer Outfall Chambers

After the flow leaves the regulator chamber it heads towards a Combined Sewer Outfall chamber (CSO), mechanical screen or netting chamber. This netting or mechanical chamber contains a system which is designed to catch debris and trash before heading into the Passaic River. The nets fill with debris, trash, rags, leaves and other items that get collected inside the sewer system. These chambers must be inspected before and after rain/wet weather events, and during periods of dry weather. If bags are found to be missing, or filled, they must be replaced and the waste must be taken to the yard for proper disposal. The following diagrams represent the flow of the Combined Sewer Outfall.

Tide Gates

Due to the configuration of certain outfalls, tide gates may be before or after the CSO or netting chambers. Tide gates are an opening through which waste water will flow through the outfall, but which closes automatically and prevents the tidal water from flowing into the sewer system. When the sewer system is in an overflow condition the tide gate opens, allowing the flow to discharge. When the sewer system is in a dry weather non-overflow condition, the tide gate closes to prevent tidal waters from entering the piping leading to the tide gate.

The tide gates on the system are to be inspected before and after rain/wet weather events, and during periods of dry weather. Debris passing through the CSO's can potentially hold open tide gates, which will allow tidal waters to pass through the tide gate in the wrong direction.

Part 4: Inspection

General Information

Tide Gate, Combined Sewer Outfall and Regulator Chamber Inspection Report has general information that is required. This information provides general details regarding the inspection. The following definitions are a part of the general information section.

- *Inspector* – Name of employee inspecting manhole.
- *Date* – Calendar date of manhole inspection.
- *Time* – Hour and Minute of manhole inspection.
- *Weather* – List current weather condition. Include temperature in degrees Fahrenheit.

Regulator Chamber

- *Debris* – Examine the weir plate inside of the diversion chamber. Is debris present on and around the weir plate? Mark if debris is present.
- *Overflow* – There is an overflow condition present. Waste water is flowing over the weir plate. This must be reported to a Supervisor immediately.

Tide Gate

- *Closed* – Examine the tide gate. A closed condition is where there is no water running into or out of the gate.
- *Lodged Open* – Foreign Material has lodged the gate open. This may be rocks, debris, or other material. This must be reported to a supervisor immediately.
- *Other* – If another condition exists, report information to a supervisor and document on this form.

CSO Nets

- *Secure* – Nets are secure. Nets sit in frame correctly and are ready to accept flow.
- *Full* – Nets are found to be full and need to be replaced.
- *Missing* – Nets are missing from previous wet weather event. This is caused by overload of debris.
- *Replaced* – Nets needed to be replaced based on previous or current inspection.
- *# of Replaced Nets* – Number of nets replaced inside CSO chamber
- *Weight of Replaced Nets* – Weight of removed nets in pounds (lbs)

CSO Screens

- *Status* – Examine the screening system. Verify it is operational and no alarms are active.
- *Screen* – Make sure the screen is clear of debris and that the mechanism is free to move over its entire operational distance.
- *Maintenance* – Make sure any required maintenance is up to date.
- *Other* – If another condition exists, report this information to a supervisor and document on the reporting form.

List any deficiencies to a Supervisor.

This concludes the Regulator, Tide Gate, and Combined Sewer Outfall Inspection. Upon completion, provide report to the supervisor. Any questions shall be directed to the supervisor.

The Regulator, Tide Gate and Combined Sewer Outfall Inspection Report can be found on the next page. Copies of these reports are available in the office. Please contact the supervisor if needed.

CITY OF PATERSON SEWER DIVISION
Regulator, Tide Gate and Outfall Inspection Report

General Information

Inspector(s) _____ Date: _____ Time: _____ AM/PM

Weather: Clear_____ Rain_____ Snow_____ Ice_____ Other _____ Temp._____

CSO #	Name	Regulator	Tide Gate	CSO Net/Screen	#of Nets Replaced	Weight of Nets Replaced	Comment
001	Curtis Place						
002	Mulberry Street						
003	West Broadway						
004	Bank Street						
005	Bridge Street						
006	Montgomery St.						
007	Straight Street						
008	Franklin Street						
009	Keen Street						
010	Warren Street						
011	Sixth Avenue						
012	E. 5th St. & 5th Ave.						
013	E. 11th Street						
014	E. 11th St. & 4th Ave.						
015	S.U.M. Park						
016	Northwest Street						
017	Arch Street						
018	Jefferson Street						
019	Stout Street						
020	N. Straight Street						
021	Bergen Street						
022	Short Street						
023	2nd Avenue						
024	3rd Avenue						
025	10th Ave. & E. 33rd St.						
026	20th Ave.						
027	Market Street						
028	S.U.M. Park 2						
029	Loop Road						
030	19th Avenue						
031	Route 20 Bypass						
032	Hudson Street						

Regulator: P - Debris Present
N - No Debris Present
OV - Overflow

Tide Gate: C - Closed
L - Open
O - Other

Nets/Screen: S - Net Secure
F - Net Full
M - Net Missing
R - Net Replaced
SO - Screen Operational
SF - Screen Failed

VII.B. MANHOLE INSPECTION PROCEDURE AND INSPECTIONREPORT

Part 1: Introduction - Purpose

The purpose of this procedure is to set forth the guidelines for completing Manhole Inspections on the Combined Sewer System of the City of Paterson. The intent of this procedure is to locate, identify, and memorialize troublesome areas in the system. This allows for the proper scheduling of routine and required maintenance to correct issues with manholes and pipelines in the system. Properly performing preventative maintenance aids in the preservation of the system.

This procedure will define the inspection information that is required, as well as definition of terms related to the inspection. All inspection reports must be filled out in a neat, orderly, concise, and informative manner. Written notes that are a part of the report are to contain details relative to the inspection. Any questions regarding this document or the completion of a Manhole Inspection Report must be directed to a supervisor for clarification.

Part 2: Manhole Inspection Report

2.1 General Information

The Manhole Inspection Report has general information that is required. This information provides general details regarding the manhole that is being inspected. The following definitions are a part of the general information section.

- *Manhole ID* – Provide Manhole ID from Sewer Map.
- *Inspector* – Name of employee inspecting manhole.
- *Date* – Calendar date of manhole inspection.
- *Time* – Hour and Minute of manhole inspection.
- *Weather* – List current weather condition. Include temperature in degrees Fahrenheit.
- *Location* – Provide location of manhole in system. Locations include street, gutter (curb line), alley, heavy traffic area, sidewalk, easement, and other. List street name(s) and other information relevant to manhole location.

2.2 Initial Inspection

The Manhole Inspection Report includes an initial inspection section. This section is an overview of the manhole. It consists of the basic components of the manhole and the evaluation of these components. The following defines the areas of the initial inspection.

- *Ground Level* – This inspects the area around the manhole at the ground level. The inspector is to look at the condition of the roadway, sidewalk, and soil area surrounding the manhole lid.
- *Manhole Cover* – This inspects the manhole cover. Good condition is defined as solid, free of defects, and undamaged. Damaged condition consists of cracks, deformed, excessive wear. Note all damages or problems with cover and if adjustments are needed.
- *Ring and Frame* – This inspects the ring and frame of the manhole. Good condition is solid, free of defects and undamaged. Damaged condition consists of cracks, deformed, excessive wear. Displaced frames are misaligned with manhole cone, and can be missing grout. If frame and cover elevation needs adjustment, note if frame needs to be raised or lowered.
- *Manhole Material* – This defines the construction of the manhole. The manhole is either constructed of brick, block, or precast concrete.
- *Cover Size* – This defines the diameter/size of the manhole cover. 24", 30" or other. Note the dimensions in inches.
- *Manhole Size* – This defines the diameter/size of the manhole. 4ft, 5ft, or other. Note all dimensions in feet.
- *Smell* – This defines the smell of the manhole. This rates the smell of manhole as to normal, bad, or excessive.
- *Vermin* – This is to define the presence of vermin. Roaches, Rats, etc.

2.3 Structural Inspection

The Manhole Inspection Report includes a structural inspection section. This section reviews the structural components of the manhole and the evaluation of these components. The following defines the areas of the structural inspection.

- *Steps* – This inspects the steps located in the manhole. The steps are in good or an unsafe condition. Steps in good condition are sturdy and are usable for entrance and egress of the manhole. Steps in an unsafe condition are rusted, pulled apart, broken or defective. Steps are to be 12" apart and if any steps are missing, this should be noted.
- *Grade Ring* – The grade ring condition is inspected. Good condition consists of a solid structural appearance. Damaged or corroded condition may show evidence of
  spalling, cracks, or separation. Misaligned sections will be off center from the riser section. Note if the joints are leaking or are in disrepair.
- *Riser Section* – The riser section is the section from the manhole cover to where the manhole maximizes diameter. Good condition consists of a solid structural appearance. Damaged or corroded condition may show evidence of spalling, cracks, or separation. Misaligned sections will be off center from the adjacent sections. Note if the joints are leaking or are in disrepair.

- *Shelf* – The shelf is the sloped concrete area above the channel. This may also be referred to as the bench. Good condition consists of a solid structural appearance. Damaged or corroded condition may show evidence of spalling, cracks, or separation. Note if the base joint is leaking or is in disrepair.
- *Channel* – The channel is the open flow section of the piping at the bottom of the manhole. Good condition consists of a solid, free flowing appearance. Obstructed channels may contain debris that is preventing free flow. Damaged or corroded condition may show evidence of spalling, cracks, or separation. Channel may also show signs of silt, rock, or grease build up. Note if the incoming and outgoing pipe joints are in poor or bad condition

2.4 Hydraulic Inspection

The Manhole Inspection Report includes a hydraulic inspection section. This section reviews the flow of the manhole and the evaluation of the flows. The following defines the areas of the hydraulic inspection.

- *Surcharge Indication* – This is to record any indication of a surcharge condition inside the manhole. A surcharge condition is shown by grease or debris on the shelf or sides of the manhole. Conditions shall be noted.
- *Flow Depth* – This inspects the depth of the flow. The flow is to be observed as full, ¾ full, ½ full, ¼ full, negligible and no flow. This flow is measured relevant to the pipe diameter.
- *Sheen* – This inspects if there is a sheen on the flow. The sheen represents oil in the flow.
- *Grease* – This inspects if there is grease in the flow. Grease is noticeable in the flow and sticks to the inside of the channel.
- *Flow* – This describes the characteristics of the flow. It is defined as clear, murky, soapy or full of heavy solids. Note if the flow contains any inconsistent flow patterns.
- *Flow Type* – This describes the flow type. Flow types are listed as steady, pulsing, turbulent, surcharging, or sluggish. Note if the flow is irregular or is inconsistent.
- *Sediment* – This describes the sediment inside of the channel. Sediment may contain, silt, shells, rock or other settled materials. Sediment is measured as none, negligible, light or heavy.

2.5 Manhole Data

This section gives component, graphical and pictorial information about the manhole. The basic manhole configuration has been presented. Indicate incoming and outgoing piping and label accordingly. This will include pipe size, piping material and invert depth of piping. Include flow direction and manhole location on map.

- *Pipe Sizes* – This notes the pipe sizes based on location. Pipe sizes are measured in inches. Sizes include: 6", 8", 12", 15", 18", 24", etc.
- *Pipe Material* – There are different piping materials used inside of the sewer system. Piping materials may be: PVC, Clay, Concrete, or Ductile Iron.
- *Invert Depth* – This is the depth to the invert of the pipe line. This is measured from Rim of the manhole in feet.
- *Feet Jetted* – This is the linear footage of main jetted from this manhole.
- *Map* – This is a map of where the manhole is in relevance to the system. Include street names, intersecting streets and adjacent upstream and downstream manholes.

Include all notes in the relevant section. If additional space is needed use additional forms. All notes are to be neat, concise, and informative.

This concludes the Manhole Inspection Report. Upon completion, provide report to the supervisor. Any questions shall be directed to the supervisor.

The Manhole Inspection Report can be found on the next page. Copies of these reports are available in the office. Please contact the supervisor if needed.

City of Paterson Sewer Division
Manhole Inspection Report
Manhole ID _____

Inspector: _____ Date_____ Date_____AM/PM

Weather: Clear ____ Rain___ Snow ___ Ice___ Other ___ Temp__

Location: _____

Location: Street___Gutter_____ Alley_____ Heavy Traffic_____ Easement____ Other_____

Initial Inspection

Manhole Cover: Good ___ Damaged___Displaced___ Missing Grout___ Adjust. Needed___

Ring and Frame: Good ___ Damaged___Displaced___ Missing Grout___ Adjust. Needed___

Manhole Material: Brick___Precast ___ Cover Size: 24"___ 30"___Other____

Manhole Size: 4ft___ 5ft ___ Other _____ Chamber Size _____

Smell: Normal_____ Bad____Excessive_____ Vermin:_____

Notes:

Structural Inspection

Steps: Good___ Unsafe___ Missing (#)___
Grade Ring: Good___ Damaged___ Corroded___ Misaligned___ Leaking or Bad Joints___
Riser: Good___ Damaged___ Corroded___ Misaligned___ Leaking or Bad Joints___
Shelf: Good___ Broken___ Corroded___ Dirty___ Bad Base Joint___
Channel: Good___ Obstructed___Corroded___ Silt___ Rockets___ Grease___
Channel Structural Condition: Good___ Fair___ Poor___ Bad Pipe Joint___

Notes:

Continued on Back

Hydraulic Inspection

Surcharge Indication: Grease/Debris on Shelf/Sides ___

Flow Depth: Full ___ 3/4 Full ___ 1/2 Full ___ 1/4 Full ___ Negligible ___ None ___

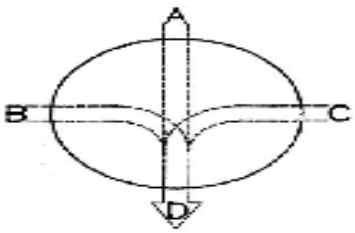
Sheen: Observed ___ None ___ **Grease:** Observed ___ None ___

Flow: Clear ___ Murky ___ Soapy ___ Heavy Solids ___

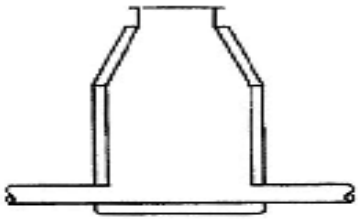
Flow Type: Steady ___ Pulsing ___ Turblent ___ Surcharging ___ Sluggish ___

Sediment: None ___ Negligible ___ Light ___ Heavy ___

Notes:



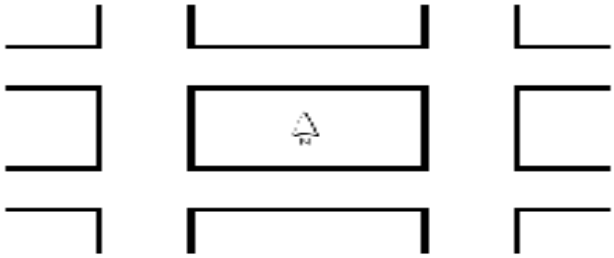
Indicate Flow Direction



Indicate Issues
Pipe Elevations

	Pipe Sizes	Material	Invert Depth	Feet Jetted
A				
B				
C				
D				
Other				

Map of Manhole Location and Flow Direction



Notes:

VII.C. CATCH BASIN MAINTENANCE PROCEDURE AND REPORT

Part 1: Introduction - Purpose

The purpose of this procedure is to set forth the guidelines for completing maintenance on the Catch Basins that are a part of the sewer system of the City of Paterson. The intent of this procedure is to locate, identify, and memorialize troublesome areas in the system. This allows for the proper scheduling of routine and required maintenance of storm water collection. Properly performing preventative maintenance aids in the preservation of the system.

This procedure will define the inspection information that is required, as well as definition of terms related to the inspection. All inspection reports must be filled out in a neat, orderly, concise, and informative manner. Written notes that are a part of the report are to contain details relative to the inspection. Any questions regarding this document or the completion of Catch Basin Maintenance Report must be directed to a supervisor for clarification.

Part 2: Catch Basin Maintenance Report

2.1 General Information

The Catch Basin Maintenance Report has general information that is required. This information provides general details regarding the manhole that is being inspected. The following definitions are a part of the general information section.

- *Inspector* – Name of employee inspecting manhole.
- *Date* – Calendar date of manhole inspection.
- *Time* – Hour and Minute of manhole inspection.
- *Weather* – List current weather condition. Include temperature in degrees Fahrenheit.
- *Location* – Provide location of manhole in system. Locations include street, gutter (curb line), alley, heavy traffic area, sidewalk, easement, and other. List street name(s) and other information relevant to manhole location.

2.2 Catch Basin Information

The Catch Basin Maintenance Report includes an initial inspection section. This section is an overview of the basin. It consists of the basic components of the basin and the evaluation of these components. The following defines the areas of the initial inspection.

- *Grate and Frame* – This inspects the grate and frame. Good condition is defined as solid, free of defects, and undamaged. Damaged condition consists of cracks, deformed, excessive wear and if adjustment is needed. Note all damages or problems with the grate and frame.
- *Surrounding Area* – Is the area surrounding the catch basin in good condition. Good condition is defined as on grade, no trip hazards, and no depressions around the basin. Is there asphalt missing, does it appear that the catch basin is belowgrade. Are there any other notable issues with the area surrounding the catch basin.
- *Floatables Bar* – Is a floatables bar present over the mouth of the inlet. This bar reduces the entrance of floatable items into the storm system.
- *Hood* – Is a hood present over the out flowing pipe, to prevent floatable material from entering.
- *Basin Type* – Block, Precast or other type of construction.
- *Basin Condition* – This defines the construction of the basin. Good condition means free of defects. Fair condition could be missing block, cracked, damaged. Poor condition means it is in need of complete overhaul. Note damages in notes section.
- *Floor of Basin* – Good condition is a solid floor. Damaged defines cracked or broken sections.
- *Lateral Jetted* – Was the lateral jetted? How many feet of piping was jetted at that time?
- *Material Removed* – This defines the type of material removed. Indicate if Grit, Leaves, Dirt or Mud were removed.
- *Direction of Flow* – Define the direction of outgoing flow. Basin to Basin or Basin to Manhole.
- *Marked Out* – Was the catch basins marked out before leaving the area?

2.3 Catch Basin Data

This section gives component, graphical and pictorial information about the basin. Indicate incoming and outgoing piping and label accordingly. Include flow direction and basin location on map.

Include all notes in the relevant section. If additional space is needed use additional forms. All notes are to be neat, concise, and informative.

This concludes the Catch Basin Maintenance Report. Upon completion, provide report to the supervisor. Any questions shall be directed to the supervisor.

The Catch Basin Maintenance Report can be found on the next page. Copies of these reports are available in the office. Please contact the supervisor if needed.

City of Paterson Sewer Division

General Information

Inspector(s): _____ **Date** _____ **Time** _____ AM/PM

Weather: Clear ___ Rain ___ Snow ___ Ice ___ Other _____ Temp _____

Location: Street ___ Gutter ___ Alley ___ Heavy Traffic ___ Easement ___ Other _____

Location: _____

Catch Basin Information

Grate and Frame: Good ___ Damaged ___ Displaced ___

Surrounding Area: Good ___ Missing Asphalt ___ Below Grade ___

Hood: Yes ___ No ___ **Floatables Barrier** Yes ___ No ___

Basin Type: Precast ___ Block ___ Other _____

Basin Condition: Good ___ Fair ___ Poor ___ Missing Bricks ___

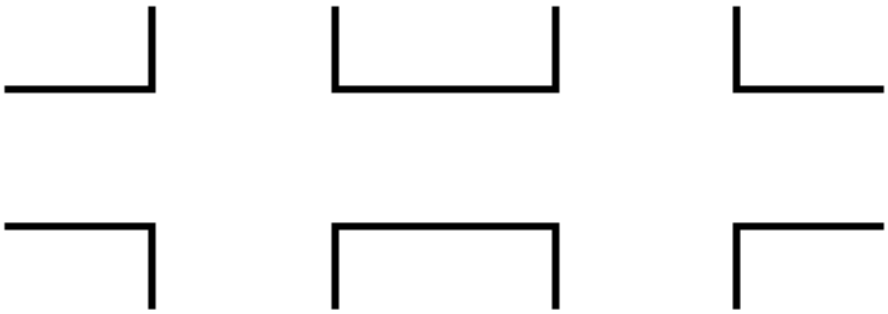
Floor of Basin: Good ___ Damaged ___

Lateral Jetted: Yes ___ No ___ Feet Jetted _____

Type of Material Removed: Grit ___ Leaves ___ Dirt/Mud ___ Garbage/Debris ___

Direction of Flow: Basin to Basin ___ Basin to Manhole ___

Marked Out: Yes ___ No ___



Mark on Map Catch Basin Location and Direction of Flow

Remarks:

VII.D. TV INSPECTION PROCEDURE AND INSPECTION REPORT

Part 1: Introduction - Purpose

The purpose of this procedure is to set forth the guidelines for completing closed-circuit television inspections on pipelines that are a part of the combined sewer system of the City of Paterson. The intent of this procedure is to locate, identify, and memorialize troublesome areas in the system. This allows for the proper scheduling of routine and required maintenance of sewage and storm water collection.

This procedure will define the inspection information that is required, as well as definition of terms related to the inspection. All inspection reports must be filled out in a neat, orderly, concise, and informative manner. Written notes that are a part of the report are to contain details relative to the inspection. Any questions regarding this document or the completion of TV Inspection Report must be directed to a supervisor for clarification.

Part 2: Catch Basin Maintenance Report

2.1 General Information

The TV Inspection Report has general information that is required. This information provides general details regarding the manhole that is being inspected. The following definitions are a part of the general information section.

- *Inspector* – Name of employee inspecting manhole.
- *Date* – Calendar date of TV inspection.
- *Time* – Hour and Minute of TV inspection.
- *Weather* – List current weather condition. Include temperature in degrees Fahrenheit.
- *Location* – Provide location of area to be TV'd in system. Locations include street, gutter (curb line), alley, heavy traffic area, sidewalk, easement, and other. List street name(s) and other information relevant to manhole location.
- *Vactor Present/Needed* – Is one of the jet/vac trucks needed to assist in TV operations?

2.2 TV Inspection Information

The TV Inspection Report includes an initial inspection section. This section is an overview of the TV work to be completed. It consists of the basic components of the inspection and the evaluation of these components. The following defines the areas of the initial inspection.

- *Reason for TV Inspection* – What is the reason for the TV inspection? Depression/Sink Hole in the roadway, Blockage, Inspection of work completed, etc.
- *Point of Entry* – What is the point of entry into the sewer system? Was access gained through a manhole, catch basin, or other? List the other form of entry.
- *Main/Pipe Size* – This notes the pipe sizes based on location. Pipe sizes are measured in inches. Sizes include 6", 8", 12", 15", 18", 24", etc.
- *Pipe Material* – There are different piping materials used inside of the sewer system. Piping materials may be: PVC, Clay, Concrete, or Ductile Iron.
- *Depth* – This is the depth to the invert of the pipe line. This is measured from Rim of the manhole in feet.
- *Televised From/Televised To:* - List the starting and ending point of the TV inspection. This is the point from which the TV camera starts and the TV camera ends.
- *Total feet of Main televised* – List the total amount of feet of main televised during this TV inspection.
- *Video Tape #* - List the video tape that contains this TV Inspection.

2.3 TV Inspection Data

Laterals - This section gives information about laterals located in the pipe line. Indicate the distances from the start of the inspection to the location of the lateral. All distances are to be measured in feet. Note if there is an issue with the lateral and/or entrance location of lateral as on the clock face. Indicate address if confirmed via dye testing.

Problems/Issues – This section gives information about issues located in the pipe line. Indicate the distances from the start of the inspection to the location of the problem or issue. All distances are to be measured in feet. Note the problem or issue. Examples of problems or issues are: Root Intrusion, Pipe Sag (list length and depth), Cracked, Broken, or Collapsed Pipe (list location in pipe i.e. Top, Side, Bottom), Offset or Separated Joints, Obstructions, Cleaning Required, Lateral Protruding, Inflow, Broken Lateral Connection, Inline Pipe Size Changes. Indicate if the problem is relevant to the homeowners lateral, and confirm the address. Pictures are to be taken of every piping issue using the video camera software.

Include all notes in the relevant section. If additional space is needed use additional forms. All notes are to be neat, concise, and informative.

This concludes the TV Inspection Procedure. Upon completion, provide report to the supervisor. Any questions shall be directed to the supervisor.

The TV Inspection Report can be found on the next page. Copies of these reports are available in the office. Please contact the supervisor if needed.

City of Paterson Sewer Division
TV Inspection Report

General Information

Inspector(s): _____ **Date** _____ **Time** _____ AM/PM

Weather: Clear ___ Rain ___ Snow ___ Ice ___ Other _____ Temp _____

Location: Street ___ Gutter ___ Alley ___ Heavy Traffic ___ Easement ___ Other _____

Location: _____ **Vactor Present/Needed:** Yes ___ No ___

TV Inspection

Reason For TV Inspection: _____

Point of Entry: Manhole ___ Catch Basin ___ Other ___

Main Size: _____ **Material of Main:** _____ **Depth:** _____

Televised From: _____ **Televised To:** _____

Total Feet of Main Televised: _____ **Video Tape#** _____

Lateral	Distance	Remarks
1		
2		
3		
4		
5		

Issue*	Distance	Problem/Issue Description**
1		
2		
3		
4		
5		

Remarks:

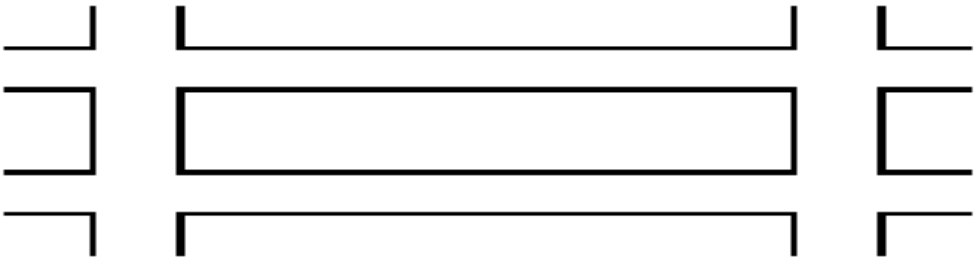
* Pictures are to be taken of all pipe issues using camera software.

** Problems/Issues: Root Intrusion, Pipe Sag (list length and depth), Cracked, Broken, or Collapsed Pipe (list location in pipe i.e. Top, Side, Bottom), Offset or Separated Joints, Obstructions, Cleaning Required, Lateral Protruding, Inflow, Broken Lateral Connection, Inline Pipe Size Changes

Continued on Back. Use additional TV Inspection Reports as needed to record lateral locations and pipe issues.

Lateral	Distance	Remarks
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Issue	Distance	Problem/Issue Description
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



Indicate Starting and Stopping Points, Direction of Flow, and Area of Concern

Problems/Issues: Root Intrusion, Pipe Sag (list length and depth), Cracked, Broken, or Collapsed Pipe (list location in pipe i.e. Top, Side, Bottom), Offset or Separated Joints, Obstructions, Cleaning Required, Lateral Protruding, Inflow, Broken Lateral Connection, Inline Pipe Size Changes

Use additional TV Inspection Reports as needed to record lateral locations and pipe issues.

VII.E. WET WEATHER OPERATING GUIDELINE AND CHECKLIST

Part 1: Introduction – Purpose

The purpose of this procedure is to set forth the guidelines for preparing and operating during a rain or wet weather event. A wet weather event is defined as any precipitation that may enter into the City of Paterson Sewer System. Any questions regarding this document or the operational procedures must be directed to a supervisor for clarification.

Part 2: Preparation for a Wet Weather Event

When a Wet Weather Event is predicted by the weather forecast/broadcast, the following must be completed.

- *Combined Sewer Outfalls* – Inspect and ensure that CSO nets are not full and secure. Follow the written procedure for the inspection of tide gates, regulator chambers, and CSO's to perform this check.
- *Catch Basins* – Insure that the storm inlets to catch basins are not blocked with debris or trash. Clean as necessary.

Part 3: Operating During a Wet Weather Event

During the course of a wet weather event the following needs to be checked.

- Check streets for localized flooding, clear debris from catch basins

Part 4: Following a Wet Weather Event

Following a wet weather event, the following must be completed.

- *Combined Sewer Outfalls* – Inspect that CSO nets are not full. Replace full nets as necessary. Check regulator chambers and tide gates as defined in the written procedure for the inspection of tide gates, regulator chambers, and CSO's. Remove debris from regulator and tide gates as necessary.
- *Catch Basins* – Check storm inlets and catch basins and remove debris that may have accumulated.

This concludes the Wet Weather Operating Guidelines. Any questions shall be directed to the supervisor.

The Wet Weather Operating Guideline Checklist can be found on the next page. Copies of these reports are available in the office. Please contact the supervisor if needed.

City of Paterson Sewer Division
Wet Weather Procedure Checklist

General Information

Inspector: _____ Date _____Time _____AM/PM

Weather: Clear ____ Rain ____ Snow ____ Ice ____Other_____ Temp _____

Total Rainfall: _____

Procedure Checklist

Pre-Wet Weather Event **Date: _____**

_____ Complete CSO/Tide Gate/Regulator Chamber Inspection

_____ Storm Inlet Grates have been cleared of debris

_____ # of Inlet Grates Cleaned

Wet Weather Event **Date: _____**

_____ Mechanical Screens Operational

_____ Controlled Localized Flooding

Post-Wet Weather Event **Date: _____**

_____ Complete CSO/Tide Gate/Regulator Chamber Inspection

_____ # of Nets Changed

_____ Storm Inlet Grates have been cleared of debris

_____ # of Inlet Grates Cleaned, if needed

Notes/Alarm Call Out Details:

VII.F. SEDIMENT REMOVAL PROCEDURE

Part 1: Introduction – Purpose

The purpose of this procedure is to set forth the guidelines for minimizing debris and sediment from entering the combined sewer system of the City of Paterson. This debris and sediment may enter the system during periods of dry weather or during a wet weather event. This procedure will define the prevention and removal components in regards to sediment and debris. This procedure is to be supplemented by the Sediment and Debris Testing Procedures for disposal of such sediment.

Part 2: Debris Control

First Level of Debris Control

The first level of debris control within the system is controlling it at the entrance points leading into the system. The entrance points to the system include catch basins, inlet structures, laterals, and manholes. Controlling debris from entering these points is an example of source control.

First Level of Eliminating Debris from the System

- Prior to wet weather events, inspect and, if necessary, as defined in the Wet Weather Operating Guidelines, catch basin inlets are to be cleaned of debris and leaves. This may include street sweeping and manually cleaning of grates. The Wet Weather Operating Guidelines can be found in the Operation and Maintenance Manual located at the Second Street Plant.
- All manholes are to be covered with lids. Manholes are to be inspected using the Manhole Inspection Procedure. If a manhole is found without a lid, one must be obtained to cover this manhole. The Manhole Inspection Procedure can be found in the Operation and Maintenance Manual located at the Second Street Plant.
- Laterals as access points combined sewerage system are homeowner, commercial, and industrial laterals. The best prevention from allowing debris from entering the system is to educate the owners of these laterals. Information relaying what can and cannot be flushed down the drain or toilet needs to be relayed. This information may be posted in the newspaper, on the City's website, or flyers sent through the postal service to name a few options of conveying this information.
- Effective erosion control practices for construction sites need to be followed as not to allow runoff into the system.

Second Level of Debris Control

The second level of debris control deals with debris already in the system. This debris can be found in catch basins, in flowing pipelines, and in netting chambers. Removing this debris is done in several ways.

Second Level of Eliminating Debris from the System

- Catch Basin Maintenance is a key factor in reducing the grit found within the system. Cleaning of these catch basins remove the debris from the sump section of the structure preventing it from entering the flow.
- A netting or screening chamber is component of the combined sewer overflows. These netting or screening chambers are in line with the outfall piping. These allow wastewater to pass through the facility while containing the debris within the wastewater flow. These netting chambers are to be inspected and maintained using the CSO, Regulator Chamber, Netting Chamber, and Tide Gate procedures.

Instances Different than Normal Sediment

Sediment, debris, and grit discovered during normal maintenance operations that are visually different than normal ordinary sediment and debris, needs to be handled cautiously. This may include products labeled with such word as POISION, DANGER, WARNING, or CAUTION.

These products potentially contain hazardous chemicals, commonly referred to as "household hazardous wastes." These products need to be separated from other wastes prior to disposal. When cleaning up these products wear rubber gloves and avoid breathing any fumes or dust. Do not work around these products in confined or poorly ventilated areas. If these products exist in a fashion that cannot be addressed by sewer department personnel then the department supervisor MUST be notified and the **NJDEP Hotline** MUST be contacted at **1-877-927-6337**.

Other dangers that exist are in sealed barrels, drums, or tanks with unknown contents. These need to be handled by trained personnel. If these products are found the sewer department personnel must STOP OPERATIONS IMMEDIATELY and the department supervisor MUST be notified and the **NJDEP Hotline** MUST be contacted at **1-877-927-6337**.

If sediment or debris discovered that does not fit either description above or contains oozing, off colored, glowing, or harmful smelling products then sewer department personnel must STOP OPERATIONS IMMEDIATELY and the department supervisor MUST be notified and the **NJDEP Hotline** MUST be contacted at **1-877-927-6337**.

If any of the above situations are discovered, the sediment and debris is not to be removed unless directed by the NJDEP. The sediment and debris must be tested based on NJDEP instruction before disposal. If the debris falls within the levels of acceptability, then it may be disposed of according to the above procedure. In the case that it is not, then a landfill that accepts these potentially hazardous materials will need to be contacted.

This concludes the Sediment Removing Procedures. Any questions shall be directed to the supervisor.

VII.G. SEWER MAIN RECONSTRUCTION PROGRAM

Part 1: Introduction - Purpose

The purpose of this program is to identify underground piping within the combined sewer system in the City of Paterson which is in need of reconstruction. The reconstruction may include lining or in kind replacement.

Part 2: General Information

The evaluation of piping within the combined sewer system shall incorporate the TV Inspection Procedure and TV Inspection Report used in the City of Paterson. The intention of reconstruction is to prevent a potential piping collapse and avoiding costly excavation costs.

Highest Priority – This includes areas of piping with issues that could cause a collapse. Sections of piping may have cracks along the crown or even sections of pipe missing. Sections of piping may have had several repairs in the past. Lining should be evaluated as a repair before larger problems develop. Lining may not be the only solution as excavation and piping replacement may be required.

Medium Priority – This includes areas of piping that show signs of needing maintenance but is not in need of immediate repair. Reconstruction work can be scheduled and evaluated as part of a larger scope.

Low Priority – This includes piping showing minimal to no signs of lining required. Piping is found in acceptable shape. During the course of routine maintenance work, sewer mains shall be monitored to identify future issues.

Capital project funding from the City of Paterson shall be evaluated during the Capital Improvement Plan process to provide funding for the reconstruction of sewer mains within the system.

VII.H. MANHOLE REPLACEMENT/REHABILITATION PROGRAM

Part 1: Introduction - Purpose

The purpose of this program is to identify manholes within the combined sewer system in the City of Paterson which are in need of rehabilitation or replacement. The program references the Manhole Inspection Procedure and Manhole Inspection Form used in the City of Paterson.

Part 2: General Information

Manholes located within the combined sewer system in the City of Paterson are inspected as a part of daily operations and the sewer piping inspection. During this inspection - data is collected. Manholes will be rehabilitated/replaced in conjunction with the sewer main reconstruction program.

Highest Priority – This includes manholes with structural damage that could possibly cause issue with the roadway, manhole structure, tie-in piping, or danger to life or property. Repair or Rehabilitation and budget options must be evaluated. This may require work to be performed on an emergency basis.

Medium Priority – This includes manholes that show signs of needing maintenance but are not a danger to life or property. Repair work can be scheduled and evaluated as part of a larger scope.

Low Priority – This includes manholes showing minimal to no signs of maintenance required. During the course of routine maintenance work, manholes shall be monitored to identify future issues.

Capital project funding from the City of Paterson shall be evaluated during the Capital Improvement Plan process to provide funding for the replacement or rehabilitation of manholes within the system.

VII.I. CATCH BASIN REPLACEMENT/REHABILITATION PROGRAM

Part 1: Introduction - Purpose

The purpose of this program is to identify catch basins within the combined sewer system in the City of Paterson which are in need of rehabilitation or replacement. The program references the Catch Basin Inspection Procedure and Catch Basin Inspection Form used in the City of Paterson.

Part 2: General Information

Catch Basins located within the combined sewer system in the City of Paterson are inspected as a part of daily operations and the sewer piping inspections. During this inspection – data is collected and summarized. Basins will be rehabilitated/replaced in conjunction with the sewer main reconstruction program.

Highest Priority – This includes catch basins with structural damage that could possibly cause issue with the roadway, catch basin structure, tie-in piping, or danger to life or property. Repair or Rehabilitation and budget options must be evaluated. This may require work to be performed on an emergency basis.

Medium Priority – This includes catch basins that show signs of needing maintenance but are not a danger to life or property. Repair work can be scheduled and evaluated as part of a larger scope.

Low Priority – This includes catch basins showing minimal to no signs of maintenance required. During the course of routine maintenance work, catch basins shall be monitored to identify future issues.

Capital project funding from the City of Paterson shall be evaluated during the Capital Improvement Plan process to provide funding for the replacement or rehabilitation of catch basins within the system.

VIII. EMERGENCY OPERATIONS

VIII.A. GENERAL

All wastewater handling systems should be-capable of continuing operation during periods of emergency. This section of the O&M Manual will attempt to define the cause of such emergencies and recommend an Emergency Response Program to respond to them, thus minimizing adverse consequences and downtime. Effective emergency planning requires considerable coordination by the operating staff. This report should serve as a guide to identify the major considerations in each type of emergency. Detailed plans should be worked out by the operating staff who can best assess their own capabilities for dealing with emergencies, and who have full knowledge of emergency resources available in the area.

VIII.B. OBJECTIVES

The objectives of an Emergency Operating and Response Program include:

1. Identify the major emergency situations arising in the operation of a wastewater conveyance system.

2. Eliminate or minimize adverse effects from emergency situations affecting the system.

3. Develop procedures for properly responding to emergencies.

4. Provide instruction for system personnel to ensure that they understand their responsibilities during emergency situations.

5. Provide inventories of available emergency equipment and outline existing mutual aid agreements and contracts with outside organizations for specialized assistance.

VIII.C. VULNERABILITY ANALYSIS

A vulnerability analysis of the system is an estimate of the degree to which the system is adversely affected in relation to the function it must perform under an emergency condition.

Wastewater conveyance facilities in general are subject to six basic types of emergencies which are as shown below:

1. Natural Disasters
    a. Windstorm and Lightning
    b. Flooding, freezing, and sleet storms
2. Equipment Failure
3. Power Loss
4. Blockage in the conveyance lines
5. Explosion

The cause/effect relationship of these emergency conditions and corrective measures are illustrated in the Vulnerability Analysis Located in Appendix D.

VIII.D. METHODS TO REDUCE SYSTEM VULNERABILITY

The following measures should be adopted to reduce system vulnerability:

D.1. Emergency Equipment Inventory

An inventory should be made of equipment and materials that are available within the collection system. A sample wastewater collection system emergency inventory worksheet follows this discussion. Using this inventory and the results of the system vulnerability analysis, additional emergency equipment and supplies may be purchased and stockpiled, or arrangements made to obtain these items through mutual aid agreements or outside contracts.

Stockpile emergence equipment/supplies might include:

- -Lightweight quick-coupling pipe
- -Portable pumps
- -Portable generators

D.2. Adequate Preventative Maintenance

All equipment regardless of design, construction, and use requires maintenance at some time during, its lifetime. To perform such maintenance in an orderly manner and in accordance with a pre-planned scheme for the purpose of obtaining the useful design life from a piece of equipment is called preventive maintenance.

Always maintain good records on all equipment purchased. Such things as date of purchase, equipment manufacturer, local service representative's name and phone number, instruction manuals, service instructions, etc., should be filed on each piece of equipment for handy reference.

D.3 Mental Preparedness

It is important that an action plan be made for responding to each type of foreseeable emergency. This plan may be either a formal outline of steps to be taken noting specific responsibilities of all parties participating in the action in the case of large-scale disasters, or, in the case of "routine" emergencies, may be a mental note made by the operator in charge.

It is strongly recommended that the operator should devote time each month to mentally "walk through" steps he would take to correct various emergency situations. An occasional afternoon spent touring the facilities and thinking about what to do if this or that piece of equipment failed, or this or that disaster occurred, would serve as a good self-training program for the operator. During such exercises, questions will inevitably arise, and if the operator will immediately seek answers from the engineer, technical representatives, etc., a reasonable, effective action plan will develop in the operators mind.

D.4. Material Preparedness – Equipment and Spare Parts

From his day-to-day operation and maintenance routine, the operator should be aware of what materials would be critical during emergencies, and should either have these kerns on hand or know exactly where to get than on a moment's notice. Along with his stock of routine spare parts, the operator should also consider stocking critical parts which are not available locally and which require considerable lead time to order from the factory. Emergency first aid equipment should also be conveniently located.

A complete equipment and spare parts inventory should be maintained, and records kept as a part of an established preventive maintenance program.

Other materials to consider in preparing for emergencies include routine hand tools, special tools, equipment for lifting or moving heavy objects, etc. The operator should also consider which pieces of heavy mechanized equipment might be required for each emergency.

D.5. Responsibility of Operating Personnel

The (Director of Public Works for the City of Paterson) will have overall responsibility for the emergency response program. This individual must be familiar with the provisions of the Disaster Relief Act of 1970 (Public Law 91-606). He should also be familiar with the "Manual for Applications," Federal Disaster Assistance Program, a publication of the Office of Emergency Preparedness. Familiarity with the procedure outlined in these documents will insure prompt Federal assistance, if required.

The sewer superintendent and operators, on the other hand, will probably be responsible for actually implementing the emergency response program. These individuals will be responsible for all emergency operations and shall report directly to the Superintendent. All regular and auxiliary plant personnel should be issued response cards outlining specific tasks and responsibilities for each emergency.

There is a logical sequence of steps in responding to emergencies which should be followed by the operators on duty. This sequence includes identifying the emergency, investigating the extent of emergency, deciding on proper initial course of action, taking corrective action to rectify the situation, and following up with a post-emergency investigation.

D.6. Emergency Response Center

The Emergency Response Center is located at 60 Temple Street. The senior operator on duty shall be responsible for the center and all the individuals who perform this function must be adequately trained and thoroughly familiar with the Emergency Operating and Response program.

When emergency conditions notices are received by telephone at the Emergency Response Center, the operator on duty should ensure all pertinent information surrounding the emergency is accurately recorded.

D.7. Mutual Aid Agreements

There are many agencies and businesses within a.-community which can be very helpful during emergencies. Mutual aid agreements should be node with such agencies and businesses to help during emergencies. Some examples of groups with wham mutual aid agreements should be developed are as follows:

- Industrial firms
- Construction companies
- Electric, gas, and telephone utilities
- Fire and police departments
- Civil defense organizations
- Health departments
- Rescue squads

Mutual assistance programs with the aforementioned organizations provide the following:

- Emergency equipment and supplies
- Spare parts
- Specialized maintenance skills
- Auxiliary operation personnel
- Chemists and/or sanitary engineers

Local police officials should be asked to critique the screening facilities' security measures. The police department's recommendations on locks, fencing, and lighting should be implemented. The police should be alerted in areas where vandals have attempted to obstruct manholes or where illegal dumping has occurred. In the event of street spills of toxic materials, the police should be instructed to immediately notify the maintenance superintendent and provide the following information:

- Type and quantity of material involved
- Location of spill
- Time of spill

The police officials should be briefed on the role their department may be asked to play during emergencies within the collection system.

Local fire department officials should visit the screening facilities and make recommendations on ways to minimize fire hazards. The fire department should also check the adequacy of existing firefighting equipment within all facilities and routinely check fire extinguishers, wiring, and combustible material storage areas. Pulping station personnel must receive first aid training from the fire department and a program should be adopted to upgrade training periodically.

Police Department Checklist:

- Notify Maintenance Superintendent in the event of a street spill of hazardous materials.
- Be prepared to assist during emergencies within the collection system.

Fire Department Checklist:

- Routinely check fire-fighting equipment within the facility and inspect facility for potential fire hazards.
- Provide first aid instructions to pooping station personnel.

VIII.E. EMERGENCY AND SPILL REPORTING PROCEDURES

The licensed operator or designee shall report any emergency or spill which may endanger health or the environment to the New Jersey Department of Environmental Protection. The following information must be relayed to the Department:

a. A description of the emergency or extent of the spill;
b. Steps being taken to determine the cause of the emergency;
c. Steps being taken to reduce or eliminate the cause of the emergency;
d. The period or duration of the emergency, including exact dates and times;
e. The case of the emergency;
f. Steps being taken to reduce, eliminate, and prevent reoccurrence of the spill or emergency.

The operator shall orally provide the information contained in items "a" to "c" to the NJDEP Hotline, 1-877-927-6337, within 2 hours from the time the operator first becomes aware of the circumstances. The operator shall orally provide information contained in items "d" through "f" to the Department within 24 hours.

A written submission addressing items "a" through "f" shall also be provided to the Department within 5 days of the time the operator becomes aware of the circumstances.

VIII.F. RESPONSES TO EMERGENCIES

VIII .F.I GENERAL

A response plan to emergencies is necessary to ensure effective continued operation of a municipal wastewater conveyance system under emergency conditions.

There are four basic elements to any sound emergency response plan:

- Rapid and positive detection system.
- Response procedure with predetermined patterns of action
- Backup capability in the event of the local response capability proves insufficient
- Warning system to alert the next level of responsibility that an emergency condition exists.

An emergency condition affecting the City wastewater conveyance system generally results from conveyance line problems.

A good emergency response plan should consider both categories. The following observations are applicable to emergency response plans for municipal wastewater collection system:

- The most desirable condition is to have the emergency response performed at the lowest level. The plan must provide adequate tools to allow the personnel nearest the emergency to cope with all but the most severe incidents.
- The operator on duty should have a procedure to ensure all pertinent information surrounding the emergency is accurately recorded. The location of the maps and emergency equipment must also be known at all times.
- The "checklist" method is best for delineating procedures and responsibilities for reporting and responding to emergencies. Lengthy manuals are of questionable value during an emergency.
- There are key people involved in any successful plan execution. These key people crust be identified and their roles clearly defined.
- The importance of training and rehearsal as part of emergency plans cannot be overstated. An essential part of any rehearsal is the critique which follows. Garments and information from critiques will ensure that the plan remains viable.
- Since it would be impossible to predict the conditions surrounding all emergency situations, the system should be provided with adequate staffing and flexibility. This aspect of preventing failures should be an important design consideration.
- The review of the emergency response capabilities in a given municipality should include the feasibility of using private firms for services. Also “mutual assistance" agreements with nearby facilities should be considered.
- Power failures are of concern to all municipal wastewater systems. To determine the probability of power failure at a given facility, coordinate with the local power company. Based on this input, alternate power sources can be selected to ensure optimum electric service.
- In developing an emergency plan, it should be policy to make maximum use of all departments in a municipality. This might include using such items as radios in the police department and emergency equipment maintained by the public works department.

- Where there are facilities that are not staffed 24 hours per day, provisions should be made for a maintenance team to visit the facilities on a periodic basis. An alarm system should be provided at each location. As a minimum requirement, the alarm system should respond to power failure overload, no load, and high water. The alarms should be connected to a central alarm center where personnel have been instructed in proper emergency response procedures. Alarm system should be failsafe. If alarm system actuates standby equipment, provisions should also be made for monitoring the standby equipment.
- Where roving maintenance crews are used, their vehicles should be equipped with radios. Telephone communications should be provided along with the tools necessary to perform all anticipated maintenance functions. The crew should consist of at least two individuals trained in all safety and emergency aspects of their job.
- Bolt down or lock down manhole covers should be used in areas where collection lines have been intentionally obstructed. Emergency and repair crews should be provided with necessary tools and or keys for removing these covers.
- To ensure proper notification of problems at remote facilities, emergency phone numbers should be posted on all mechanical screening facilities. A color coded exterior light alarm system could also be employed as backup.
- Standby equipment should be put into service periodically as part of the overall response program. In particular, diesel generators should be exercised.
- A study should be made of the municipal wastewater collection system for the purpose of selecting sampling points. With sampling points selected prior to an actual emergency, dispatching sampling teams with appropriate equipment can be accomplished efficiently and with a minimum of confusion.
- It is important, in any emergency plan for municipal wastewater collection and conveyance system, to provide for chlorination of spills of raw wastewater.
- Metering equipment maintenance can be contracted economically to the equipment manufacturer in some instances.
- Where wastewater facilities have only a single operator after normal working hours, these facility operators should be required to give a status report to a 24-hour central telephone switchboard on an hourly basis. If no report is received – the switchboard operator alerts a predetermined supervisor.
- To ensure proper operation of standby generators, they should be run on a scheduled basis. Battery chargers can also be provided to assist starting.
- Mobile gasoline powered pumps and portable generators should be made available to respond to station emergencies.
- Ensure that as-build drawings of the facility are accurate. During emergencies these drawings may be invaluable in locating valves, electrical boxes, etc., that are needed to minimize the effects of an incident.
- Areas that are subject to flooding due to equipment or line failures, such as pump pits, should be studied. Cutoffs should be provided and any special tools required when these areas are flooded should be purchased.
- Construction photographs should be properly cataloged and cross referenced with engineering drawings. These photos can be of great value in estimating the severity of an emergency condition.

Response to Emergency Effects

- Analyze all emergencies to determine the proper course of action.
- Implement protection measures where applicable.
- Dispatch pre-trained crew where applicable.
- Check spare parts inventory before ordering parts.
- Keep down-time to a minimum.
- Critique the response plan.

Emergency Response Plans all have a common base. This common base consists of assessment of severity and response to the emergency so as to minimize environmental impact of the incident. This is due largely to the many different types of emergencies that create similar effects on the wastewater system. Each system has its own characteristics and problems. The specifics of an Emergency Response Plan must therefore be tailored to allow for the peculiarities of the specific system. The purpose of an ERP is to minimize damage and to provide the most efficient utilization of resources available to the system owner. The objectives of any ERP can be achieved only with trained personnel and sufficient emergency equipment and material.

Emergency Response Summary

What is considered an emergency at one facility might not be classified as such at another because of the differences in personnel, equipment, training, and size.

IX. MAINTENANCE SCHEDULES

Routine Maintenance Schedule

The following items should be conducted periodically as indicated. Records should be maintained for all inspections and maintained for five years.

Description	Frequency
1. Inspect all Outfalls for Dry Weather Overflows	Monthly
2. Regulators – Inspect/Clean	Monthly
3. Check Outfall's Structural Condition	Annually at time of Annual Certification
4. Check Outfall for Free Discharge	Annually at time of Annual Certification
5. Clean Catch Basin Sumps	Minimum of once per year
6. Inspect Combined Sewer Manholes and Visually Inspect Pipes Upstream and Downstream	Manhole records should be developed every time a manhole is entered or the sewer serviced
7. Inspect/Clean the Wait Street Storm Water Netting System and clean and exchange the netting as required	Weekly
8. Inspect/Clean the Molly Ann's Brook flow diversion facility and clean and service the equipment as required	Weekly

The CSO regulator chambers for Outfalls 001 through 028 are owned and operated by the Passaic Valley Sewerage Commissioners. Any problems noted, which include dry weather overflows existing form the discharge pipe, should be reported to the Passaic Valley Sewerage Commissioners Water Control Facility at 201-344-1800, and investigated to make sure that the discharge is not originating in the outfall pipe. CSO regulators for Outfalls 029 through 032 are owned and operated by the City.

In addition to possibly reporting dry weather overflows to the Passaic Valley Sewerage Commissioners, <u>all</u> dry weather overflows observed by City personnel should be reported to the NJDEP Hotline at 609-292-7172.

Procedures for Sewer and Regulator Maintenance

The entrance of any portion of a person's body into the combined sewer system constitutes a confined space entry subject to OSHA Confined Space Energy Regulations (Part 1910-Occupational Safety and Health Standards). The following safety procedures are minimum standards, which should be implemented and are not intended to be all-inclusive or to replace the above-referenced regulation.

It is ultimately the responsibility of the operating personnel to assure that all work is competed in a safe and acceptable manner and in accordance with all OSHA Standards.

1) Safely secure the area from traffic with cones, barriers and/or vehicles utilizing warning lights. If necessary, flagmen with traffic vests and flags should direct traffic. All personnel should wear traffic vests.

2) Open manholes upstream and downstream to ventilate the sewer.

3) After sufficient time to ventilate, test the atmosphere with a calibrated air monitor, which tests the atmosphere for oxygen, hydrogen sulfide, carbon monoxide and combustibility. A pre-entry checklist should be filled out and kept on file. If any alarm should go off, action should be taken; a permit is required and no entry should be allowed until the problem is relieved or personal protective equipment is worn protecting the entrant.

   The air monitor should remain on, and in the confined space with the person the entire time it is occupied.

4) Check and report defective ladders.

5) Clear debris from manhole or regulator chamber.

6) Flush clean manhole and components.

7) Document Overflow Inspection.

Procedures at all Regulators:

1) Safely secure the area from traffic with cones, barriers and/or vehicles utilizing warning lights. If necessary, flagmen with traffic vests and flags should direct traffic. All personnel should wear traffic safety vests.

2) Open manholes to ventilate chambers.

3) After sufficient time to ventilate, test the atmosphere with a calibrated air monitor, which tests the atmosphere for oxygen, hydrogen sulfide, carbon monoxide and combustibility. A pre-entry checklist should be filled out and kept on file. If any alarm should go off, action should be taken; a permit is required and no entry should be allowed until the problem is relieved or personal protective equipment is worn protecting the entrant.

   The air monitor should remain in the regulator the entire time it is occupied.

4) Check and report defective ladders.

5) Clear debris from chamber.

6) Flush clean chamber and components.

PROCEDURES FOR MECHANICAL REGULATORS

NOTE: PROVISIONS MUST BE MADE FOR BYPASS PUMPING WHEN SERVICING THE GATES OR THE GATES MUST BE REOPENED SO AS TO PREVENT A DRY WETHER OVERFLOW.

1) Close shutter gate and drain chamber. NOTE: Gate must be secured against reopening at this point in order to protect workers. Be aware that a shutter gate can open rapidly, and that the top edge of the shutter can strike a worker standing on the gate body. **CAUTION: DO NOT STAND ON SHUTTER GATE OR REGULATOR BODY.**

2) Clean the float guide pipes thoroughly. If the guides are wall-mounted, check all pivot points for free movement.

3) Check the position of the float bottom stops. Reset as necessary. Settings are indicated on the arrangement drawing for each location.

4) Thoroughly clean the external surfaces of the float. In particular, in the areas which contact the guide pipes. If there is suspicion that the float is leaking and allowing water to accumulate inside, remove the cover plate and check. After any required correction, replace the cover and effectively seal same.

5) Check the position of the float stop. Reset as necessary. Refer to the drawing for setting.

6) Thoroughly clean the float wheel. Remove the cotter pin that holds the float chain in place on the wheel. Remove this pin and the chain. Clean the chain of all accumulations. Clean the wheel. In particular, clean the wheel grooves of any accumulated produce of corrosion.

7) Check the arrangement drawing to determine if weights were required for the float and the number and size of same. Are they in place?

8) Check to confirm that the chain linking the float to the float wheel is perpendicular and plumb when the gate is in the half-open position. If not, loosen the pillow block bolts and reposition the wheel.

9) Replace the linkage to the float wheel.

10) Check the transmission shaft for alignment. It should be exactly level. Loosen pillow blocks and shim as necessary to level shaft. Shaft condition – i.e., outer appearance, usually does not affect function. Rough clean and clear any debris.

11) Thoroughly clean the shutter gate wheel. Remove cotter pin, then chain pin and chain. Clean the chain. Clean the wheel groove of every particle to bare metal. Replace the chain.

12) Lubricate bearings in pillow block housings. Carry stainless steel Alemite type fittings and replace old fittings as necessary.

13) Check shutter gate linkage to assure that it is perpendicular and plumb. Loosen pillow block bolts and adjust as necessary. Shutter gate must be half-open for this check.

14) Check drawing for number and size of weights on shutter linkage. Replace any that are missing.

15) Check drawing for the number and size of counterweights required on the shutter gate side. Replace any that are missing.

16) With shutter gate now clamped closed (wedge board between ceiling and top of shutter), remove the trunnion cover plates and clear housings of old lubricant. Replace plates and lubricate. Replace grease fittings as necessary.

17) Check for clearance of at least 1/2" between the shutter gate arm (at the trunnion) and the masonry. If necessary, chip masonry to create this clearance.

18) Remove board and other retention holding the shutter gate closed. Stand clear, open the gate and relieve flow that has accumulated while the gate was closed.

19) When flow is back to normal dry weather flow, by pushing on the gate, cycle the gate and check for free movement. If held fully closed and then let go, gate should open on its own without any push in the opening direction. One should be able to close the gate with the pressure of one hand.

20) Check and report structural problems, masonry problems such as erosion, etc.

21) Some chambers are equipped with weir plates. Check drawing for location to determine the correct settings for the weir and reset as necessary. Wirebrush clean weir setting screws to facilitate future changes in weir elevations.

22) If it is necessary to adjust the chains to increase or decrease the flow through the regulator, adjust only the float chain-adjusting buckle. The adjusting buckle on the gate side is only used to fine-tune the position of the gate during initial installation.

23) The frequency of maintenance and its extent will depend on your experience at each regulator. In general, the thorough procedures listed here should be done annually with fewer procedures, mostly limited to cleaning, in between. Some chambers will accumulate debris. Some might have to be checked after every storm.

24) After each servicing, chalk should be applied across the weir and checked several times during the ensuing days to see of dry weather overflows occur.

PROCEDURES FOR SIDE OVERLOW WEIRS
WITH ADJUSTABLE STOP LOGS

1) Flush clean stop logs and remove debris from the crest of the weir.

2) Replace stop logs if leaking or deteriorated.

3) Make sure surface of joining stop logs are sealed to prevent seepage. Seal with caulk as needed.

4) Chalk the crest of stop logs. Return in succeeding days to observe if any dry weather overflows occurred.

5) Raise stop logs in the event of a dry weather overflow incident.

PROCEDURES FOR SIDE OVERFLOW WEIRS WITHOUT ADJUSTABLE STOP LOGS

1) Flush clean the manhole or chamber.

2) Remove debris or any blockage from the outlet pipe.

3) Chalk crest of side overflow weir. Return in succeeding days to observe if any dry weather overflows occurred.

4) If dry weather overflows occur, determine if capacity of combined sewer is diminished by sediment buildup or just increased flow.

5) Flush clean sewer reaches;

   Two (2) immediately upstream
   Four (4) immediately downstream
   If sediment buildup is the problem

6) Raise side overflow weir with mortar or with course of bricks or blocks.

All regulators should be maintained on a regulator basis. The frequency of maintenance and its extent will depend on experience at each regulator. Cleaning should be undertaken more frequently with visits to observe conditions after every major storm.

X. ADMINISTRATIVE FUNCTIONS

The Administrative functions on utilizing and complying with the Operation and Maintenance Manual for Combined Sewer Overflows is with the Sewerage Department. The chain of command and staffing are outlined in Section III – Personnel.

XI. FISCAL MANAGEMENT

The City of Paterson has committed through the Fiscal Budget, the necessary funds to supply staff and equipment to implement the Operation and Maintenance Plan & Manual for the City's Combined Sewer Overflows. This Fiscal Budget and Financial Management System can be found in Appendix A and Appendix B of this manual.

XII. CONTRACTOR-REPAIR WORK

The City of Paterson procures yearly rehabilitation work projects and emergency as-needed repair work proposals for sanitary sewer & storm sewer system.

This annual contract is used for any repairs to the piping and appurtenances associated with sewer system which includes the combined sanitary sewer system and storm water overflow system.

Sewer Reconstruction Contract:

J.R. Haftek
179 Ryerson Avenue
Paterson, NJ 07502

Contact: Roger Haftek – Cell # (201) 697-6445

Emergency Sewer Reconstruction Contract:

Montana Construction
80 Contant Avenue
Lodi, NJ 07644

Contact: Dominic Santaite – Cell # (201) 538-1269

Emergency Lateral Repair Contract:

J.R. Haftek
179 Ryerson Avenue
Paterson, NJ 07502

Contact: Roger Haftek – Cell # (201) 697-6445

Sewer Televising and Cleaning Contract:

National Water Main Cleaning Co.
875 Summer Avenue
Newark, NJ 07104

Contact: Joseph Perone – Tel. # (973) 483-3200

Regulator Repair & Maintenance Contract:

National Water Main Cleaning Co.
875 Summer Avenue
Newark, NJ 07104

Contact: Joseph Perone – Tel. # (973) 483-3200

XIII. MARKOUTS

The City of Paterson collection system has registered all its forcemains with the "one call system" – 1-800-272-1000 - as required by the New Jersey Underground mark-out law (One Call Law). As allowed by law, the City of Paterson collection system has elected to register its gravity sewer mains. Sewer line mark-outs must be completed within three working days after the receipt of such request, unless an emergency markout is requested. Emergency markout should be done as soon as possible. All mark-outs should be handled in accordance with the New Jersey underground mark-out law. The City of Paterson Sewer Division will mark forcemains and gravity mains. The City of Paterson Sewer Division does not mark out homeowner laterals.

APPENDIX A

ANNUAL BUDGET

'13/'14-FISCAL 2013 BUD	2013 ACT	2014 REC		2013 BUDGETED	2013 EXPENDED	2014 RECOM-MENDED	DIFF 2014 O/(U) 2013 BUD	DIFFER-ENCE %
			SALARIES & WAGES					
1	0	1	Asst. Supv. of Sewers	55,227		55,227	0	0.0
1	1	1	Supv. of Sewers	58,368		59,535	1,167	2.0
1	1	1	Equip. Operator	33,406		34,075	669	2.0
2	2	2	Heavy Equip. Operator	66,723		68,629	1,906	2.9
7	3	7	Sewer Maint. Worker	165,370		168,838	3,468	2.1
					223,020			
Total 12	7	12		379,094	223,020	386,304	7,210	1.9
			Overtime	34,277	31,168	34,963	686	2.0
			Reserve	0	0	0	0	0.0
			Salary Reduction	(73,614)	0	0	73,614	(100.0)
			2013 Salary Adjustment	0	0	5,084	5,084	0.0
			TOTAL S. & W.	339,757	254,188	426,351	86,594	25.5
			OTHER EXPENSES					
			Office Equip. Purchase	0	1,341	0	0	0.0
			Office Supplies	1,000	800	1,000	0	0.0
			Travel & Conferences	75	0	75	0	0.0
			Petty Cash	25	0	25	0	0.0
			Washing City Vehicles	50	0	50	0	0.0
			Books	0	0	0	0	0.0
			Photography Equipment	0	0	0	0	0.0
			Gasoline	0	0	0	0	0.0
			Vehicle Parts	0	0	0	0	0.0
			Vehicle Repair & Maint.	10,000	6,500	10,000	0	0.0
			Equipment Repair	0	0	0	0	0.0
			Equipment Purchase	500	0	500	0	0.0
			Training & Education	500	465	500	0	0.0
			Outside Services	560,000	463,875	560,000	0	0.0
			Chemicals	2,000	0	2,000	0	0.0
			Medical Supplies	400	0	400	0	0.0
			Clothing Allowance	9,500	7,800	9,500	0	0.0
			Radio Purchase	0	0	0	0	0.0
			Small Equip./Tool Purch.	4,000	1,908	4,000	0	0.0
			Combined Sewer Outflow	0	41,465	0	0	0.0
			Signs and Materials	0	0	0	0	0.0
			Equip. Parts (non-veh.)	8,750	6,079	8,750	0	0.0
			Emerg. Sewer Repairs	0	0	0	0	0.0
			Clothing	0	0	0	0	0.0
			State Fees	18,500	18,450	18,500	0	0.0
			Protective Clothing	1,000	0	1,000	0	0.0
			Misc. - Other Expenses	2,000	2,969	2,000	0	0.0
			Reserve - 2013 Bills	0	63,592	0	0	0.0
			TOTAL O.E.	618,300	615,244	618,300	0	0.0
			TOTAL - WATER & SEWER	958,057	869,432	1,044,651	86,594	9.0

9/13/2013

EMERGENCY SEWER REPAIR

`13/`14-FISCAL	2013 BUDGETED	2013 EXPENDED	2014 RECOM-MENDED	DIFF 2014 O/(U) 2013 BUD	DIFFER-ENCE %
OTHER EXPENSES					
Sewer Repairs	1,285,000	0	1,285,000	0	0.0
Capital Projects	(1,235,000)	0	(1,235,000)	0	0.0
Reserve - 2013 Bills	0	0	0	0	0.0
TOTAL - EMERGENCY SEWER REPAIR	50,000	0	50,000	0	0.0

'13/'14-FISCAL	2013 BUDGETED	2013 EXPENDED	2014 RECOM-MENDED	DIFF 2014 O/(U) 2013 BUD	DIFFER-ENCE %
OTHER EXPENSES					
Street Repair					
Other Expenses	76,920	68,696	76,920	0	0.0
Reserve - 2013 Bills	0	8,224	0	0	0.0
TOTAL - STREET REPAIR	76,920	76,920	76,920	0	0.0

APPENDIX B

FINANCIAL MANAGEMENT SYSTEM

Financial Management System

Resources should provide for funds and personnel for routine operation and maintenance of the combined sewer system with a reasonable contingency amount for emergencies. Those involved in implementing day-to-day maintenance functions should have the opportunity to participate in the budget process so that the decision making people are aware of the needs.

The following items need to be considered when developing annual budgets:

CSO Regulator Facilities	Are owned and operated by the PVSC for discharge to outfalls 001 through 027. The internal facilities discharging to Outfalls 028 through 031 are the City's responsibility as is Outfall 032. The status of the various CSO projects is detailed in the periodic status reports.
CSO Discharge Points	Annual inspections of all discharge points should be completed to review and allocate monies for discharge pipes that require rehabilitation or to clean discharge pipes if necessary. In addition, any discharge pipes that are buried should be uncovered to allow proper operation of the system unless otherwise noted in the Annual Inspection Report.
Combined Sewer System	An annual review should be completed of all sewer operating records to note areas wherein continuous maintenance problems occur including blockages or suspected collapsed pipe. Monies should be allocated for internal inspection or rehabilitation of the system on an annual basis.

APPENDIX C

A GUIDE TO SAFETY IN CONFINED SPACES

INTRODUCTION

This Summary will only provide general information and is not intended to be all inclusive on confined space requirements which are included in Section 8. Personnel operating in confined spaces should be fully aware of and follow all OSHA requirements.

Are you required to construct or work in any of the following: PIPELINE PIT, PUMPING STATION, SEPTIC TANK, SEWAGE DIGESTER, SEWER OR SEWER MANHOLES, or similar type enclosure? Then you are working in confined space.

How can you identify a confined space? It has any one or more of the following characteristics:

Limited openings for entry and exit
Unfavorable natural ventilation
Not designed for continuous worker occupancy

Limited openings for entry and exit:

Confined space openings are limited primarily by size or location. Openings are usually small, sometimes just 18 inches in diameter, and are difficult to move through. Small openings can also make it very difficult to get needed equipment in or out of the spaces, especially protective equipment such as respirators used to enter spaces with hazardous atmospheres or life-saving equipment.

However, some openings are very large, especially open-topped spaces such as pits, degreasers, excavations, and ships' holds. Access to open-topped spaces may require the use of ladders, hoists or other devices. Escape from such areas may be very difficult in emergency situations.

Unfavorable natural ventilation:

When the design of a confined space does not allow air to pass freely through it, the atmosphere inside may become very different from the atmosphere inside. Deadly gasses may be trapped inside, particularly if the space is used to store or process chemicals or organic substances that decompose. There may not be enough oxygen inside the confined space to support life, or the air could be so oxygen-rich that it increases the chance of fire or explosion if a source of ignition is present.

Not designed for continuous worker occupancy:

Most confined spaces are not designed for workers to routinely enter and work in. They are designed to store a product, enclose materials and processes, or transport products or substances. Therefore, occasional worker entry for inspection, maintenance, repair, cleanup, or similar tasks is often difficult and dangerous due to chemical or physical hazards within the space.

A confined space found in the workplace may have a combination of these three characteristics, which can complicate working in and around these spaces as well as rescue operations during emergencies. If a survey of your working area identifies one or more workspaces with the characteristics listed above.

READ THE FOLLOWING INFORMATION – SOMEDAY IT MAY SAVE YOUR LIFE, OR THE LIFE OF A CO-WORKER.

What are the Hazards Involved in Entering and Working in Confined Spaces?

Hazardous Atmosphere

As mentioned, the atmosphere in a confined space may be extremely hazardous because of the lack of natural air movement. This characteristic of confined spaces can result in 1) oxygen-deficient atmospheres, 2) flammable atmospheres, and/or 3) toxic atmospheres.

1. Oxygen-Deficient Atmospheres:

An oxygen-deficient atmosphere has less than 19.5% available oxygen (0_2). Any atmosphere with less than 19.5% oxygen should **not** be entered without an approved self-contained breathing apparatus (SCBA).

The oxygen level in a confined space can decrease because of work being done, such as welding, cutting, or brazing; or, it can be decreased by certain chemical reactions (rusting) or through bacterial action (fermentation).

The oxygen level is also decreased if oxygen is displaced by another gas, such as carbon dioxide or nitrogen. Total displacement of oxygen by another gas, such as carbon dioxide, will result in unconsciousness, followed by death.

Oxygen Scale

21%	O_2 Enriched
19%	Minimum for Safe Entry
16%	Impaired Judgment & Breathing
14%	Faulty Judgment Rapid Fatigue
6%	Difficult Breathing Death in Minutes

2. Flammable Atmospheres:

Two things make an atmosphere flammable: 1) the oxygen in air; and 2) a flammable gas, vapor, or dust in the proper mixture. Different gases have different flammable ranges. If a source of ignition (e.g. a sparking or electrical tool) is introduced into a space containing a flammable atmosphere, an explosion will result.

An oxygen-enriched atmosphere (above 21%) will cause flammable materials, such as clothing and hair, to burn violently when ignited. Therefore, **never use pure oxygen to ventilate a confined space.** Ventilate with normal air.

3. Toxic Atmospheres

Most substances (liquids, vapors, gases, mists, solid materials and dusts) should be considered hazardous in confined space. Toxic substances can emanate from the following:

a) The product stored in the space. A produce can be absorbed into the walls and release toxic gases when removed. Also, when cleaning out the residue of a stored product, toxic gases can be given off. For example, when sludge is removed from a tank, the decomposed material can emit deadly hydrogen sulfide gas.

b) The work being performed in a confined space, such as welding, cutting, brazing, painting, scraping, sanding, degreasing, etc. Toxic atmospheres are generated in various processes. For example, cleaning solvents are used in many industries for cleaning/degreasing. The vapors from these solvents are very toxic in a confined space.

c) Areas adjacent to the confined space. Toxicants produced by work performed in the area of confined spaces can enter and accumulate in confined spaces.

TESTING THE ATMOSPHERE

It is important to understand that some gases are heavier than air and will settle to the bottom of a confined space. Also, some gases are lighter than the air and will be found around the top of the confined space. Therefore, **it is necessary to test all areas (top, middle, bottom) of a confined space with properly calibrated testing instruments to determine what gases are present**. If testing reveals oxygen-deficiency or the presence of toxic gases or vapors, the space must be ventilated and re-tested before workers enter. If ventilation is not possible and entry is necessary (e.g., for emergency rescue), workers must have appropriate respiratory protection.

NEVER TRUST YOUR SENSES TO DETERMINE IF THE AIR IN A CONFINED SPACE IS SAFE! YOU CANNOT SEE OR SMELL MANY TOXIC GASES AND VAPORS, NOR CAN YOU DETERMINE THE LEVEL OF OXYGEN PRESENT.

RESPIRATORS

Respirators are devices that can allow workers to safely breathe without inhaling toxic gases or particles. Two basic types include air-purifying respirators, which filer dangerous substances from the air, and air-supplying respirators, which deliver a supply of safe breathing air from a tank or an uncontaminated area nearby.

ONLY AIR-SUPPLYING RESPIRATORS SHOULD BE USED IN CONFINED SPACES WHERE THERE IS NOT ENOUGH OXYGEN.

Selecting the proper respirator for the job, hazard and person is very important, as is through training in the use and limitations of respirators. Questions regarding the proper selection and use of respirators should be addressed to a certified industrial hygienist, or to the NIOSH Division of Safety Research, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505.

STANDBY/RESCUE

A standby should be assigned to remain on the outside of the confined space and be in constant contact (visual or speech) with the worker inside. The standby, who should not have any other duties but to serve as a standby, must know who should be notified in case of emergency. **Standby personnel should not enter a confined space** until help arrives, and then only with proper protective equipment, lifelines and respirators.

Over 50% of the workers who die in confined spaces are those attempting to rescue other workers. Rescuers must be trained in and follow established emergency procedures and use appropriate equipment and techniques (lifelines, respiratory protection, standby, etc.). Steps for safe rescue should be included in all confined space entry procedures. Rescue efforts should be well planned and drills should be frequently conducted on emergency procedures. An unplanned rescue, such as when someone instinctively rushes in to help a downed co-worker, can easily result in a double fatality or even multiple fatalities when there are more than one would-be rescuer.

REMEMBER: AN UNPLANNED RESCUE WILL PROBABLY BE YOUR LAST.

APPENDIX D

VULNERABILITY ANALYSIS

Emergency Operations Program
Vulnerability Analysis

1. Vulnerability Analysis

An evaluation and vulnerability analysis has been completed for the City of Paterson combined sewer system to evaluate the implications of potential upsets and the influence of these upsets on the receiving waters with specific consideration of the receiving waters uses such as, bathing, beaches, fishing, shellfish harvesting, water supply, etc. The following summarizes the results of this analysis.

A) Potential Upsets to the System Include:

1) Sewage blockages in the Combined Sewer System;
2) Excessive Deposition of solids causing surcharging of the system;
3) Excessive infiltration resulting in high flows to the interceptor;
4) Structural deterioration or collapse of combined sewer;
5) Blockage of the regulator in the CSO control facility resulting in a dry weather overflow;
6) Wet weather induced discharge.

B) Influence on Receiving Water

1) **Sewage blockages in the Combined Sewer System:** None, for most incidents, since the influence is restricted to combined sewer system and homes. If severe, however, the blockage can result in surcharging of the system and possible overland flow of sewage to a storm sewer or the river. Under this situation there would be the potential for an impact of the receiving waters. Since there are no bathing beaches, shellfish beds, or water supply intakes within the general areas of these discharges, the impact of these upsets should be minimal.

2) **Excessive Deposition of solids causing surcharging of the system:** None – influence restricted to combined sewer system and homes.

3) **Excessive infiltration resulting in high flows to the interceptor:** In an extreme circumstance this condition could lead to a dry weather overflow, which could impact the receiving waters. Since there are no bathing beaches, shellfish beds, or water supply intakes within the general area of these discharges, the impact of these upsets should be minimal. PVSC owns and operates the CSO regulators at twenty-eight (28) locations and therefore has responsibility towards assuring that weir elevations do not allow dry weather overflows from excessive infiltration, if present. The rest of the CSO control facilities are the responsibility of the City.

4) **Structural deterioration or collapse of combined sewer:** None for most incidents since the influence is restricted to combined sewer system and homes. If severe, however, the collapse can result in surcharging of the system and possible overland flow of sewage to a storm sewer or the river. Under this situation there would be the potential for an impact of the receiving waters. Since there are no bathing beaches, shellfish beds, or water supply intakes within the general area of these discharges, the impact of these upsets should be minimal.

5) **Blockage of the regulator in the CSO control facility resulting in a dry weather overflow:** This condition could lead to a dry weather overflow, which could impact the receiving waters. Since there are no bathing beaches, or water supply intakes within the general area of these discharges, the impact of these upsets should be minimal. PVSC owns and operates the CSO regulators at twenty-seven (27) locations and therefore has responsibility towards assuring that regulator gates are clear and free from debris. CS0-028 is not under the City NJPDES Permit but is owned, operated and maintained by the PVSC.

6) **Wet weather induced discharge:** This condition is permitted by the permit, but still could impact the receiving waters. Since there are no bathing beaches, water supply intakes, or shell fishing areas in the general area of these discharges, their impact should be minimal.

2. Emergency Response Program

Emergency response within the City of Paterson deals primarily with blockages within the combined sewer system. In matters like this, the emergency response is provided by personnel in the Sewer Department. The chain of command should be from the City Engineer, Licensed Collection System Operator, or Sewer Supervisor to the Laborers. The Licensed Operator and City Engineer or Director of Public Works (if different) should be notified any time there is a dry weather overflow or major problem in the collection system. Problems that occur during non-working hours are handles through the police department. A telephone list of responsible individuals on call during the night, on weekends, and on holidays is maintained by the sewer and police departments. Emergency responses of this type will typically not result in impacts to the receiving waters, however, if overland flow occurs and there is a discharge to a storm sewer or directly to the receiving waters, the receiving waters will be impacted.

The NJDEP considers any discharge of sewage that is not due to events of precipitation including floods, storm events, and prolonged snowmelts, a dry weather overflow. The following incidents are considered dry weather overflows and must be reported:

- Any dry weather discharge of sewage through the CSO discharge pipe
- Overland flow and discharges of sewage to a storm sewer
- Overland flow and discharges of sewage directly into the receiving waters

Should operating personnel note a dry weather overflow, the following agencies must be notified:

1) The NJDEP Hotline
Telephone No.: (877) 927-6337

2) The Passaic Valley Sewerage Commissioners
Telephone No.: (973) 344-1600

3) Public Health
County of Passaic, City of Paterson Board of Health
Telephone No.: (973) 881-3900

The following procedure must be followed whenever any of the above referenced incidents are observed:

Reporting Requirements

a. The permittee shall report all dry weather overflows (DWO).

b. The permittee shall, within 24 hours after the commencement of the DWO or of the permittee becoming aware of the DWO, verbally communicate the following information to the Department via the NJDEP Hotline at (877) 927-6337.

i. A description of the discharge, including the time of the discharge, the location of the discharge, the designated name and the three-digit discharge serial number as indicated on Figure 1.

While most discharge points are associated with PVSC CSO regulators, the following discharge points have CSO control facilities owned and operated by the City:

S.U.M. Park 2	028
Loop Road	029
19th Avenue	030
Route 20 Bypass	031

Additional information which must be provided is the estimated volumetric flow rate of the discharge, a description of the nature of the discharge as (1) “a dry weather overflow of wastewater from a combined sewer system” or, as (2) “a dry weather overflow of wastewater from a combined sewer system which is (or “maybe”) contaminated with (insert the identity of the suspected contaminant/pollutant, or describe the source of the additional and unusual contamination/pollutant), and the name of the receiving waterbody;

If a dry weather overflow is caused by a problem in the PVSC regulator then PVSC has responsibility for providing the following additional information, alternately if it is determined that the dry weather discharge was caused by an occurrence in the City's combined sewer system regulator or discharge pipe then the City must provide the following additional information to the NJDEP:

ii. The duration of the discharge, including the dates and times, and, if the reason for the discharge has not been corrected, the anticipated time when the permittee will return the discharge into compliance;

iii. The cause of the discharge;

iv. Steps the permittee will take to determine the cause of the discharge;

v. Steps the permittee is taking to reduce and eliminate the non-complying discharge; and

vi. Steps the permittee is taking to reduce, eliminate, and prevent reoccurrence of the discharge.

c. The permittee shall, within five (5) business days, Saturdays, Sunday, and state and federal holidays excepted, after the commencement of a DWO or of the permittee becoming aware of a DWO, submit written documentation to the person identified in f. below, including properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge event, and including all of the information listed below. The Department must receive the information listed under item i. through vi. below within the (5) days period in order for the permittee to meet this requirement. If the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information required in b. above, the permittee shall immediately submit such facts or information to the Department. The written information to be submitted includes the following:

i. All of the information required by b, above;

ii. All properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge;

iii. Reasons that the DWO occurred, including the case of the DWO;

iv. Evidence that the permittee was properly operating the facility at the time of the discharge;

v. Evidence that the permittee submitted notice of the DWO as required pursuant to c, above, or in the case of a DWO resulting from the performance by the permittee of maintenance operations, evidence the permittee provided prior notice and received prior written approval therefore from the Department, including the name, title, address, and telephone number of the individual who satisfied this requirement, the date and specific time the individual notified the Department, and the name and title of the individual within the Department to which the permittee gave such notice; and

vi. Evidence that the permittee complied with all remedial measures the Department required.

d. For any DWO or other CSO which causes injury to persons, or damage to the environment or which could constitute a threat to human health or the environment, the permittee shall comply with the following reporting requirements;

i. The permittee shall, within two hours after the commencement of the discharge or of the permittee becoming aware of the discharge, verbally communicate the following information to the Department via the NJDEP Hotline at (877) 927-6337;

A) A description of the discharge, including the time of the discharge, the location of the discharge (provide the designated discharge point name and three-digit serial number); the estimated· volume of the discharge, a description of the discharge as (1) "a dry weather overflow of wastewater from a combined sewer system which is (or "maybe") contaminated with (insert the identity of the suspected contaminant/pollutant), and the name of the receiving waterbody;

B) Steps the permittee will take to determine the cause of the permit noncompliance; and

C) Steps the permittee will take to reduce and eliminate the noncomplying discharge.

ii. The permittee shall, within 24 hours after the commencement of the discharge or of the permittee becoming aware of the discharge, verbally communicate the following information to the Department via the NJDEP Hotline at (877) 927-6337;

A) The duration of the discharge, including the exact date and times, and if the noncompliance has not been corrected, the anticipated time when the permittee will return the discharge to compliance;

B) The cause of the noncompliance

C) Steps the permittee is taking to reduce, eliminate, and prevent reoccurrence of the noncomplying discharge;

D) An estimate of the threat to human health or the environment posed by the discharge;

E) The measures the permittee has taken or is taking to remediate the problem and any damage or injury to human health or the environment and to avoid a repetition of the problem; and

F) Any revisions to the information required by d.i. above.

e. The permittee shall, within five (5) business days, Saturdays, Sundays, and state and federal holidays excepted, after the commencement of the discharge or of the permittee becoming aware of the discharge, submit in writing to the person identified in f., below all of the information required in d.i. and d.ii., above, if the permittee had not previously submitted the information in writing to the Department. The Department must receive the information required by the preceding paragraph within the five (5) days period in order for the permittee to meet this requirement. If the permittee becomes aware that it has failed to submit any relevant facts or submitted incorrect information required in d.i. and d.ii., above, the permittee shall immediately submit such facts or information to the Department.

f. The permittee shall submit the written notice required pursuant to c. and d. above to:

Administrator
Water Compliance and Enforcement Element
New Jersey Department of Environmental Protection
P.O. Box 422
Trenton, New Jersey 08625-0422

APPENDIX E

CSO GENERAL PERMIT

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

MARK N. MAURIELLO
Acting Commissioner

Division of Water Quality
Municipal Finance & Construction Element
PO Box 425
Trenton, New Jersey 08625-0425
(609) 292-5563

CERTIFIED MAIL No. 7003 2260 0001 3054 7673

May 29, 2009

Frederick Margron, City Engineer
Paterson City
111 Broadway
Paterson, NJ 07505

RECEIVED
JUN 03 2009
By

Subject: Daft Surface Water Master General Permit Renewal
Category: CSO -Combined Sewer Systems (GP)
NJPDES Permit No. NJ0105023

Dear Mr. Margron:

I am writing to inform you that the New Jersey Department of Environmental Protection (Department) proposes to reissue the New Jersey Pollutant Discharge Elimination System (NJPDES) General Permit for Combined Sewer Systems (CSS) NJPDES No. NJ0105023. This general permit is issued to control the discharge of pollutants from CSS through Combined Sewer Overflow Points. This General Permit was last reissued on June 30, 2004 and is due to expire on July 31, 2009.

The Department proposes to reissue the General Permit for Combined Sewer Systems (CSS) with minor administrative changes. These changes will not impact the substantive provisions of the permit. The Department shall automatically renew existing Individual Authorizations when the General Permit is reissued.

Enclosed is the draft permit package consisting of the Public Notice, Fact Sheet and the proposed draft renewal General Permit for Combined Sewer Systems NJPDES NJ010523. Notice of this draft permit action will appear in The Record, The Star-Ledger, The Asbury Park Press, The Times, the Courier-Post and in the June 10th, 2009 DEP Bulletin.

All comments must be submitted in writing to Mr. Dan Zeppenfeld, Division of Water Quality, Municipal Finance and Construction Element, PO Box 425, Trenton, NJ 08625-0425 by the close of the public comment period. All persons who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice

of the Department's final decision to issue, revoke, or redraft the document. The public comment shall close no sooner than June 30th, 2009 or 30-days after the last date of publication of the public notice in a newspaper.

The draft permit and associated documents are available at the Division of Water Quality's website for permitting and technical information at **http://www.state.nj.us/dep/dwq/gps.htm.**

If you have questions or comments regarding the draft action, please contact Mr. Zeppenfeld, at (609) 292-5563.

Sincerely,

Stanley V. Cach, Jr., PE, PP
Assistant Director

Enclosures

New Jersey Department of Environmental Protection
Division of Water Quality
Municipal Finance & Construction Element
PO Box 425
Trenton, New Jersey 08625-0425
(609) 292-5563

PUBLIC NOTICE

Notice is hereby given that the New Jersey Department of Environmental Protection (Department) proposes to reissue the New Jersey Pollutant Discharge Elimination System (NJPDES) General Permit for Combined Sewer Systems (CSS) NJPDES No. NJ0105023, in accordance with NJAC 7:14A et. seq. and by the authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et. seq. This General Permit was last reissued on June 30, 2004 and is due to expire on July 31, 2009.

This General Permit controls the discharge of pollutants from Combined Sewer Systems (CSS) through Combined Sewer Overflow Points (CSO Points) within the State of New Jersey. CSSs are primarily located along the tidal portions of the Delaware River and its tributaries, the Raritan River, the tidal and non-tidal portions of the Passaic River, and throughout the New York-New Jersey Harbor Complex. There are approximately two hundred six (206) CSO Points currently authorized under the General Permit. These discharge points are associated with the combined sewer systems of approximately sixteen-municipality (16) or other public entities that own and/or operate a portion of a CSS. CSSs are located in Bergen, Camden, Essex, Hudson, Mercer, Middlesex, Passaic, and Union Counties. Table I contains a list of all CSO Points, authorized under this General Permit, and the receiving waterbodies to which they discharge.

The General Permit is consistent with the National CSO Control Policy, the New York/New Jersey Harbor Estuary Comprehensive Conservation and Management Plan, and the Delaware Estuary Plan. The existing General Permit requires owners and/or operators of any portion of a combined sewer system to develop and implement technology-based control measures including the Nine Minimum Control Measures and development of CSO Long-term Control Plans (LTCPs) identified in the National CSO Control Policy. The technology-based requirements include the prohibition of Dry Weather Overflows, prevention of surface water intrusion into the CSS, the control of Solids/Floatables, the development of proper operation and maintenance plans and manuals, and the institution of monitoring and reporting procedures.

The Department proposes to reissue the General Permit for Combined Sewer Systems (CSS) with minor administrative changes. These changes will not impact the substantive provisions of the permit. The Department shall automatically renew existing Individual Authorizations when the General Permit is reissued. Anyone seeking authorization under the General Permit that is not currently authorized under the General Permit must submit an administratively complete RFA in accordance with the requirements of Subpart I B of the General Permit.

This draft General Permit contains conditions necessary to implement the provisions of the regulations for implementing the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq.), which are promulgated pursuant to the authority of New Jersey's "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.), the "Sewage Infrastructure Improvement Act" (N.J.S.A. 58:25-23 et seq.), the National Combined Sewer Overflow Control Strategy (National Strategy) (See 54 FR 37370, Sept. 8, 1989), the National CSO Control Policy (National Policy) (See 59 FR. 18688, April 19, 1994), N.J.A.C. 7:14A-11, Appendix C (Appendix C Incorporates

the Federal Policy on combined sewer overflows.), the Federal Water Pollution Control Act (Clean Water Act) as amended by the Water Quality Act of 1987 (P.L. 100-4, approved Feb. 4, 1987), and the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554 (or "2000 amendments to the Clean Water Act"). A final decision on this draft General Permit will be made in accordance with the procedures outlined in N.J.A.C. 7:14A-15 "PROCEDURES FOR DECISION MAKING-NJPDES PERMIT PROCESSING REQUIREMENTS".

This draft General Permit prepared by the Department is based on the administrative record which is on file at the offices of the Department, located at 401 East State Street, in the City of Trenton, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 AM and 4:00 PM, Monday through Friday. Appointments for inspection of the file may be scheduled by calling (609) 292-0400. The documents are also available at the Division of Water Quality's website for permitting and technical information at http://www.state.nj.us/dep/dwq/gps.htm.

Interested persons must submit written comments on the draft General Permit to:

S. Dan Zeppenfeld, P.E., P.P.
Division of Water Quality
Municipal Finance & Construction Element
PO Box 425
Trenton, NJ 08625-0425

All comments must be post marked or delivered by the close of the public comment period. All persons, including those requesting authorization, who believe that any condition of this draft General Permit is inappropriate or that the Department's tentative decision to issue this draft General Permit is inappropriate, must raise all reasonably ascertainable arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. The Department will respond to all significant and timely comments when a final decision is issued. The applicants and each interested person who has submitted written comments will be notified of the Department's final decision. The public comment period shall close no sooner than June 30th, 2009 or 30-days after the last date of publication of the public notice in a newspaper.

Additional information concerning this draft General Permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday by contacting Mr. S. Dan Zeppenfeld, P.E., P.P., at (609) 292-5563.

GENERAL PERMIT No. NJ0105023
COMBINED SEWER OVERFLOW POINTS
TABLE I

OWNER/OPERATOR (Total Number of CSO Points)	NUMBER OF CSO POINTS	RECEIVING WATERBODY
Bayonne Municipal Utilities Authority (29)	8	Kill Van Kull
	3	Upper New York Bay
	18	Newark Bay
Camden, City of (28)	3	Newton Creek
	15	Delaware River
	10	Cooper River
Camden County Municipal Utilities Authority (1)	1	Delaware River
East Newark Borough (1)	1	Passaic River
Elizabeth, City of (28)	1	Peripheral Ditch
	20	Elizabeth River
	2	Great Ditch
	4	Arthur Kill
	1	Newark Bay
Gloucester City (7)	6	Delaware River
	1	Newton Creek
Guttenberg, Town of (1)	1	Hudson River
Hackensack, City of (2)	2	Hackensack River
Harrison, Town of (7)	7	Passaic River
Jersey City Municipal Utilities Authority (22)	2	Newark Bay
	1	Penhorn Creek
	9	Hackensack River
	10	Hudson River
Kearny, Town of (5)	3	Passaic River
	2	Frank's Creek
Newark Department of Water and Sewer Utilities (17)	13	Passaic River
	4	Peripheral Ditch
North Bergen Township Municipal Utilities Authority (10)	5	Cromakill Creek
	1	Bellman's Creek
	1	Paunpeck Creek
	2	Penhorn Creek
	1	Hudson River
Paterson, City of (26)	26	Passaic River
Perth Amboy, City of (16)	9	Raritan River
	7	Arthur Kill
Ridgefield Park Village (6)	4	Hackensack River
	2	Overpeck Creek
TOTAL NUMBER OF CSO POINTS	**206**	

FACT SHEET FOR RENEWAL OF GENERAL PERMIT FOR COMBINED SEWER SYSTEMS NO. NJ0105023

I. BACKGROUND

The New Jersey Department of Environmental Protection (Department) proposes to reissue the New Jersey Pollutant Discharge Elimination System (NJPDES) General Permit for Combined Sewer Systems NJPDES No. NJ0105023, in accordance with NJAC 7:14A and by the authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et. seq.

This General Permit was last reissued on June 30, 2004 and became effective on August 1, 2004. The Department issued a minor modification on December 1, 2006. This permit action provided a two-month extension of time to complete and submit the Cost and Performance Analysis Report and Public Participation Program Report. Specifically, the date for submission of these documents was extended from February 1, 2007 to April 1, 2007.

The current effective General Permit is scheduled to expire on July 31, 2009. The Department proposes to reissue the General Permit for Combined Sewer Systems (CSS) with minor administrative changes. These changes will not impact the substantive provisions of the permit.

The Department shall automatically renew existing Individual Authorizations when the General Permit is reissued. Anyone seeking authorization under the General Permit that is not currently authorized under the General Permit must submit an administratively complete RFA in accordance with the requirements of Subpart I B of the General Permit.

II. AUTHORIZED DISCHARGES

This General Permit controls the discharge of pollutants from Combined Sewer Systems (CSS) through Combined Sewer Overflow Points (CSO Points) within the State of New Jersey. CSSs are primarily located along the tidal portions of the Delaware River and its tributaries, the Raritan River, along tidal and non-tidal portions of the Passaic River, and throughout the New York-New Jersey Harbor Complex. There are approximately two hundred six (206) CSO Points currently authorized under the General Permit. These discharges are associated with the combined sewer systems of approximately sixteen-municipality (16) or other public entities that own and/or operate a portion of a CSS. CSSs are located in Bergen, Camden, Essex, Hudson, Mercer, Middlesex, Passaic, and Union Counties.

This permit may authorize all existing combined sewer systems and combined sewer overflow points specifically identified or described in the individual authorizations. Table I contains a list of all CSO Points, authorized under this General Permit, and the receiving waterbodies to which they discharge.

III. TYPE AND QUANTITY OF WASTES, FLUIDS, OR POLLUTANTS

CSSs are wastewater collection systems designed to carry sanitary sewage, industrial and commercial wastewater, and storm water runoff in a single system of pipes to a publicly owned treatment works (POTW). During dry weather, all flow (composed primarily of sanitary sewage and industrial/commercial wastewater) is conveyed to the POTW. During periods of rainfall or snow melt, the total wastewater flows entering the collection system can exceed the capacity of the system or the treatment facility. Under such conditions, CSSs are designed to overflow at predetermined CSO Points and result in discharges of excess wastewater flows directly to surface water bodies such as rivers, estuaries, and coastal waters.

Because CSO discharges include raw sewage, they contain a combination of untreated human waste and pollutants discharged by commercial and industrial establishments. CSOs also have a significant storm water component that includes pollutants from urban and rural runoff. These pathogens, solids, and toxic pollutants may be discharged directly to the waters of the state during wet weather events.

IV. DESCRIPTION OF THE DRAFT GENERAL PERMIT

The Department proposes to reissue the General Permit for Combined Sewer Systems (CSS) with minor administrative changes that clarify the address to send certain required submissions.

V. APPLICABLE STATUTORY AND REGULATORY REQUIREMENTS

The draft General Permit contains conditions necessary to administer the provisions of the regulations for implementing "The New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.), which are promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.), the New Jersey "Sewage Infrastructure Improvement Act"(N.J.S.A. 58:25-23 et seq.), the Federal Water Pollution Control Act (Clean Water Act) as amended by the Water Quality Act of 1987 (P.L. 100-4, approved Feb. 4, 1987), and the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554 (or "2000 amendments to the federal Clean Water Act (CWA)").

The Department is coordinating the development of CSO LTCPs by integrating the planning activities/responsibilities of the various combined sewer system owners and/or operators into the Watershed Management Planning and Total Maximum Daily Loads (TMDLs) development process.

The terms, conditions and compliance schedules of the current General Permit will remain in effect without any change. Please refer to the fact sheet for the current effective permit that briefly sets forth the principal facts and the significant factual, legal, methodological and policy considerations examined during preparation of the current permit.

The Department has included a reopener clause to allow the permit to be modified or revoked and reissued, as provided pursuant to NJAC 14A-6.13(c), for any valid reason.

VI. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED PERMIT CONDITIONS

There are no requested variances or alternative permit conditions in regard to this draft General Permit.

VII. PROCEDURES FOR REACHING A FINAL PERMIT DECISION ON THE DRAFT GENERAL PERMIT RENEWAL

A copy of the public notice for the draft renewal permit will be sent to all existing permittees. The Public Notice will be published in the DEP Bulletin on June 10th, 2009 and will be available on the Department's website at www.state.nj.us/dep/dwq. The public comment shall close no sooner than June 30th, 2009 or 30-days after the last date of publication of the public notice in a newspaper.

All persons, including those requesting authorization, who believe that any condition of this draft General Permit is inappropriate or that the Department's tentative decision to issue this draft General Permit is inappropriate, must raise all reasonably ascertainable arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period.

The Department will respond to all significant and timely comments when a final decision is issued. The applicants and each interested person who has submitted written comments will be notified of the Department's final decision.

A final decision on this General Permit will be made in accordance with the procedures outlined in N.J.A.C. 7:14A-15 "PROCEDURES FOR DECISION MAKING-NJPDES PERMIT PROCESSING REQUIREMENTS".

VIII. DEPARTMENT CONTACT

Interested persons may submit written comments on the draft General Permit to:

S. Dan Zeppenfeld, P.E., P.P.
Division of Water Quality
Municipal Finance & Construction Element
PO Box 425
Trenton, NJ 08625-0425

IX. ADMINISTRATIVE RECORD

This draft General Permit prepared by the Department is based on the administrative record which is on file at the offices of the Department, located at 401 East State Street, in the City of Trenton, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 AM and 4:00 PM, Monday through Friday. Appointments for inspection of the file may be scheduled by calling (609) 292-0400. The documents are also available at the Division of Water Quality's website for permitting and technical information at http://www.state.nj.us/dep/dwq/gps.htm.

GENERAL PERMIT No. NJ0105023
COMBINED SEWER OVERFLOW POINTS
TABLE I

OWNER/OPERATOR (Total Number of CSO Points)	NUMBER OF CSO POINTS	RECEIVING WATERBODY
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East Newark Borough (1)	1	Passaic River
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	20	Elizabeth River
	2	Great Ditch
	4	Arthur Kill
	1	Newark Bay
Gloucester City (7)	6	Delaware River
	1	Newton Creek
Guttenberg, Town of (1)	1	Hudson River
Hackensack, City of (2)	2	Hackensack River
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	2	Frank's Creek
Newark Department of Water and Sewer Utilities (17)	13	Passaic River
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	1	Bellman's Creek
	1	Paunpeck Creek
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	7	Arthur Kill
Ridgefield Park Village (6)	4	Hackensack River
	2	Overpeck Creek
TOTAL NUMBER OF CSO POINTS	**206**	

PART I

NARRATIVE REQUIREMENTS

Combined Sewer Systems (GP)

A. AUTHORIZATION UNDER THIS PERMIT

1. Permit Area

a. This permit applies to all areas of the State of New Jersey.

2. Eligibility & Scope

a. This permit may authorize all existing combined sewer systems and combined sewer overflow points specifically identified or described in the individual authorizations.

3. Definitions

a. As used in this permit, the following words and terms shall have the following meanings:

i. "Combined Sewer Collection and Conveyance System" means any portion of a Combined Sewer System excluding the Combined Sewer Overflow Control Facilities.

ii. "Combined Sewer Overflow" (CSO) means the excess flow from the combined sewer system which is not conveyed to the Domestic Treatment Works for treatment, but transmitted by pipe or other channel directly to the waters of the State.

iii. "Combined Sewer Overflow Control Facilities" means any portion of the combined sewer system beginning from and including the point at which flows are diverted within the collection and conveyance system from proceeding to the treatment facility and ending at the CSO Point where the CSO is directed to the receiving waters. These portions of the combined sewer system include, but are not limited to, the regulator the outfall structure, tide gate, and other appurtenances.

iv. "Combined Sewer Overflow Point" (CSO Point) means a discrete point in a combined sewer system which provides for the release of combined sewer overflows (See N.J.A.C. 7:22A-1.4).

v. "Combined Sewer System" means a sewer system that is designed to carry sanitary sewage at all times and that also is designed to collect and transport storm water from streets and other sources, thus serving a combined purpose (See N.J.A.C. 7:14-1.2).

vi. "Domestic Treatment Works" (DTW) means all publicly owned treatment works as well as any privately owned treatment works processing primarily domestic wastewater and pollutants together with any ground water, surface water, stormwater or process wastewater that may be present (See N.J.A.C. 7:14A:1.2).

vii. "Domestic Wastewater" means the liquid waste or liquid borne wastes discharged into a domestic treatment works (See N.J.A.C. 7:14A-1.2).

ii. The date the application for such other permit (or request for authorization under another general permit) is denied, or as otherwise specified by the Department.

c. If such a permittee fails to submit a complete application or request for authorization by the date specified by the Department, then the general permit authorization remains in effect only until that date, unless otherwise specified by the Department.

5. Authorization

a. In order to obtain authorization under this permit, a complete Request for Authorization (RFA) shall be submitted in accordance with the requirements of Subpart IB of this permit unless the provisions of paragraph 5.C, below, apply. Upon review of the RFA, the Department may, in accordance with N.J.A.C. 7:14A-6.13, do one of the following:

i. Issue notification of Authorization under this permit, in which case authorization is deemed effective as of the date the complete RFA is received by the Department;

ii. Deny authorization under this permit and require submittal of an application for an individual DSW permit; or

iii. Deny authorization under this permit and require submittal of an RFA for another general permit.

b. For combined sewer overflows authorized by this permit, the permittee is exempt from the provision in N.J.A.C. 7:14A-6.2 which states that the discharge of any pollutant not specifically regulated in the NJPDES permit or listed in the NJPDES application shall constitute a violation of the permit.

c. Existing authorizations will be renewed automatically when the general permit is issued or reissued. The most recently submitted request for authorization will be considered a timely and complete request for authorization under the reissued permit. The automatic renewal of authorization is applicable only for any permittees who had authorization under the permit immediately prior to the effective date of the reissued permit.

d. The Department shall issue a notice of renewed authorization to eligible permittees. If a permittee is aware that any information in the most recently submitted request for authorization is no longer true accurate, and /or complete, the permittee shall provide the correct information to the Department within 90-days after the effective date of the permit.

B. REQUEST FOR AUTHORIZATION REQUIREMENTS

1. Deadlines for Requesting Authorization

a. A Request for Authorization (RFA) for a facility must be submitted prior to EDP.

b. The Department may, at its discretion, accept an RFA submitted after the foregoing deadline, however, the permittee may still be held liable for any violations that occurred prior to the effective date of the authorization.

2. Persons Requesting Authorization

a. An RFA may be submitted by any person who currently owns and/or operates part of a combined sewer system. An RFA may be jointly submitted by all persons who currently own and/or operate any part of a combined sewer system.

3. Contents of the Request for Authorization: A completed RFA shall include all of the following information regarding the regulated facility using the Department's RFA form (additional sheets may be attached as required):

i. A schematic diagram showing the configuration of the combined sewer overflow control facilities associated with each CSO Point to the combined sewer system and the combined sewer collection and conveyance system. This diagram should show the relationships of the CSO Point to portion of the combined sewer overflow control facility where the wastewater is diverted from the combined sewer overflow collection and conveyance facilities(i.e., the location of the regulator or other diversion structure), and the CSO Point at which the wastewater is discharged into the receiving water body (i.e., the end of the outfall structure).

ii. Using Form A: SCHEDULE OF COMBINED SEWER OVERFLOW POINTS, provide the following information:
i) The discharge serial number (a three-digit number beginning with 001 for the CSO Point, consecutively assigned to each CSO Point);
ii) The CSO Point name;
iii) The latitude and longitude of CSO Point (end of pipe), accurate to the nearest second;
iv) The name of the receiving waterbody: and
v) A description of any treatment received by the CSO prior to discharge;

k. The Federal tax identification number of the owner;

l. A copy of the U.S. Geological Survey Topographic Map, 7.5 minute quadrangle series (SCALE 1:24,000), showing the location of the facility (ies) and the name of the quadrangle(s). The applicant shall indicate on the map the facilities and/or activities, that authorization under this general permit is being requested, as follows: the delineation of the service area of the collection systems; the alignment of conveyance systems (interceptors, force mains, trunk sewers, etc.); and/or the location and/or alignment of combined sewer overflow control facilities (regulators) and the corresponding combined sewer overflow points (i.e. ends of outfalls and/or other discharge structures);

m. A brief narrative description of the facility(ies), collection system, combined sewer overflow point, or combined sewer overflow control facility, as applicable;

n. The RFA certification contained in Attachment A;

o. A photocopy of the publication of the public notice required under B.5, below (the name and date of the publication and the section and page the public notice was printed in shall be indicated); and

p. Any additional information that may be required by the Department to be included as part of the RFA if the Department determines that such additional information (including, but not limited to data, reports, specifications, plans, permits, or other information) is reasonably necessary to determine whether to authorize the discharge under this permit.

4. Where to submit

a. A completed and signed RFA shall be submitted to the Department at the address specified on the Department's RFA form.

5. Additional Notification

iii. The permittee shall, within five (5) business days, Saturdays, Sundays, and state and federal holidays excepted, after the commencement of a DWO or of the permittee becoming aware of a DWO, submit written documentation, to the person identified in vii below, including properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge event, and including all of the information listed below. The Department must receive the information listed under items i through vi below within the five (5) day period in order for the permittee to meet this requirement. If the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information required in ii, above, the permittee shall immediately submit such facts or information to the Department. The written information to be submitted includes the following:
(A) All the information required by ii above;
(B) All properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge;
(C) Reasons that the DWO occurred including the cause of the DWO;
(D) Evidence that the permittee was properly operating facility at the time of the discharge;
(E) Evidence that the permittee submitted notice of the DWO as required pursuant to iii., above, or in the case of a DWO resulting from the performance by the permittee of maintenance operations, evidence the permittee provided prior notice and received prior written approval therefor from the Department including the name, title, address, and telephone number of the individual who satisfied this requirement , the date and specific time the individual notified the Department, and the name and title of the individual within the Department to which the permittee gave such notice; and
(F) Evidence that the permittee complied with all remedial measures the Department required.

iv. For any DWO or other CSO which causes injury to persons, or damage to the environment or which could constitute a threat to human health or the environment, the permittee shall comply with the following reporting requirements of v, vi, and vii, below.

v. The permittee shall, within two hours after the commencement of the discharge or of the permittee becoming aware of the discharge, verbally communicate the following information to the Department via the DEP Hotline at 1-877-927-6337:
(A) A description of the discharge, including the time of the discharge, the location of the discharge (provide the designated discharge point name and three-digit serial number), the estimated volume of the discharge, a description of the nature of the discharge as (1) "a dry weather overflow of wastewater from a combined sewer system which is (or "may be") contaminated with (insert the identity of the suspected contaminant/pollutant, or describe the source of additional and unusual contamination/pollutant), and the name of the receiving waterbody;
(B) Steps the permittee will take to determine the cause of the permit noncompliance; and
(C) Steps the permittee will take to reduce and eliminate the noncomplying discharge.

ii. On or before March 1, 1996, the permittee shall submit to Bureau of Financing and Construction Permits, Municipal Finance & Construction Element, within the Division of Water Quality, an Interim Solids/Floatables Control Measures Plan for each CSO Point. The permittee, when developing and evaluating control measures to meet this requirement, shall, at a minimum, evaluate the implementation of each of the Screening and Skimming Control Measures listed in 4.a.v.(i) and (ii), below, for each CSO Point. If the permittee demonstrates, to the satisfaction of the Department, that there are no feasible Interim Solids/Floatables Control Measures that can be economically justified for a specific CSO Point, the permittee shall immediately initiate the development and implementation Long-term Solids/Floatables Control Measure(s) required in 4.b., below, for that CSO Point.

iii. Within sixty (60) days of the permittee's receipt of the Department's written comments on the plan, the permittee shall submit revised plans that include the modifications required in the Department's comments.

iv. Within twelve (12) months of the permittee's receipt of the Department's written approval of the permittee's Interim Solids/Floatables Control Measures Plan, the permittee shall implement the approved Interim Solids/Floatables Control Measures, unless paragraph C.4.a.x. applies.

v. The conceptual plan shall fully document the evaluation of the Interim Solids/Floatables Control Measures in accordance with 4.a.vii., below. Control Measures which, as a minimum, must be evaluated include the following:
(A) Screening Technologies - Screening Technologies involve the screening of Solids/Floatables materials from combined sewer overflows. Control measures under this category include, but not limited to, baffles, trash racks, static screens, end of pipe netting, and mechanical screens. Implementation of a screening technology that complies with the same performance criteria specified under item 4.b.ii. below shall be given priority for consideration. If it is determined that the use of the 0.5 inch bar screen is not feasible, the permittee shall evaluate alternative grid or bar screen sizes.
(B) Skimming Technologies- Skimming Technologies skim Solids/Floatables materials from the receiving water body surface. Alternatives within this category include, but not limited to, the placement of booms around an outfall or groups of outfalls, skimming open water areas with "skimming boats", and flow balance method (FBI) containment. Skimming control measures must be designed to prevent the transport of Solids/Floatables materials in the receiving water.

vi. All Solids/Floatables materials removed from the combined sewer overflow which are not conveyed to the DTW must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities.

vii. The methodology used in developing, evaluating, selecting, and implementing each Interim Solids/Floatables Control Measure and the reasons why a particular control measure was determined to be inappropriate to utilize for a CSO Point shall be documented. The documentation shall be submitted with the conceptual plan required in C4.a.ii., above, and incorporated into the CSOPPP. The documentation of the evaluation process to be submitted with the conceptual plan, required in 4.a.ii. above, shall include:
(A) A list and description of alternatives that were considered;
(B) A list and description of the alternatives selected as the final plan for Interim Solids/Floatables Control measures;
(C) A summary of the alternatives considered, but rejected, and the basis for rejecting them;
(D) The construction/implementation cost estimates, operation, and maintenance costs; and
(E) An estimate of the anticipated decrease in Solids/Floatables for each control measure at each CSO Point.

iii. The permittee may petition the Department for use of an alternative control measure by demonstrating, to the satisfaction of the Department, the appropriateness of the permittee's proposed alternative control measure as follows:
(A) The permittee shall submit, to the Department, a cost/performance analysis. This cost/performance analysis shall:
(1) evaluate the cost of implementing control measures to meet the requirements of C.4.b.ii.;
(2) evaluate the cost of implementing the permittee's proposed alternative control measure(s) and the resultant Solids/Floatables reduction; and
(3) demonstrate that the cost of implementing control measures to meet the requirements of C.4.b.ii. increases disproportionately and only provides a marginal increase in Solids/Floatables reduction over that of the proposed alternative control measure(s); and
(B) The permittee shall also perform and submit a separate analysis which demonstrates that the permittee's alternative control measure is designed to capture and remove objectionable Solids/Floatables, such as medical wastes including tampons applicators, syringes, condoms, vials, etc. from each CSO Point.

iv. All Solids/Floatables materials removed from the CSO which are not conveyed to the DTW must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities. The reduction of the size of Solids/Floatables materials in the CSO prior to the discharge to the waters of the State to achieve compliance with this permit is not permitted.

v. The permittee shall plan, design, construct, operate and/or implement Long-term Solids/Floatables Control Measures in accordance with the following schedule:
(A) Submit an approvable Long-term Solids/Floatables Control Measures Plan to the Department, on or before March 1, 1996;
(B) The permittee shall within sixty (60) days of the permittee's receipt of the Department's written comments on the permittee's Long-term Solids/Floatables Control Measures Plan modify that submission pursuant the Department's written comments and resubmit it for the Department's approval;
(C) Within twelve (12) months of the permittee's receipt of the Department's written conceptual approval of its Long-term Solids/Floatables Control Measures Plan, the permittee, unless otherwise directed by the Department, shall submit an administratively complete Stage II/III TWA application in accordance with N.J.A.C. 7:14A-22.8 and 7:14A-22-10 to the Bureau of Administration and Management, within the Division of Water Quality;
(D) With in fifteen (15) months of the permittee's receipt of Department's Stage II/III TWA, the permittee shall complete construction and commence operation of the approved Long-term Solids/Floatables Control Measures, unless otherwise directed by the Department.

vi. The conceptual plan required in C.4.b.v.(A). shall, as a minimum, contain a site plan, showing all existing and proposed facilities, a project schedule for design, and construction/implementation, and a description and schedule for obtaining all federal, state,regional and/or local agency approvals. The selected plan will describe all institutional arrangements which are necessary to implement the selected plan, as well as, identify the owner and operator of all proposed facilities.

vii. All studies associated with the planning, design, and construction/implementation including the implementation schedule of the Long-term Solids/Floatables Control Measures, shall be incorporated into the CSOPPP.

i. A sewer service area map delineating existing facilities. This map shall:
(A) Delineate the service area of each catchment area of the collection and conveyance system;
(B) Show the collection and conveyance system detailing the size, types, and shapes of all pipes and appurtenances;
(C) Indicate the identity and location of each existing pumping station;
(D) Show the location, size, type, and shape of all interceptor sewers and trunk sewers;
(E) Show the location and identity of each regulator and CSO Point;
(F) Show all point source discharges to receiving waters associated with the combined sewer system; and
(G) Delineate all areas served by separate stormwater sewer systems or separate sanitary sewer systems, and the location of where, if at all, these systems connect into and contribute wastewater to the combined sewer system.

ii. An inventory and engineering assessment of the operational status and mechanical and structural integrity of the major components of the combined sewer system. This assessment shall be both a narrative and graphical descriptions addressing size, shape, hydraulic capacity, including, but not limited to, the combined sewer overflow control facilities, pumping stations, interceptors, and force mains, etc. The hydraulic performance capability of each component shall be determined.

d. The permittee shall incorporate the FIAA into the CSOPPP and shall maintain the FIAA as current and applicable for the life of the permit.

D. MONITORING AND REPORTING REQUIREMENTS

1. Monitoring Requirements

a. Annual Inspections

i. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Control Facilities.

ii. The permittee shall conduct an annual inspection of all combined sewer overflow control facilities owned and/or operated by the permittee. The permittee shall inspect and prepare an engineering assessment of the mechanical and structural integrity and operability of each portion of the combined sewer overflow control facilities including the identification of any recommended rehabilitation measures or correction actions necessary to bring the facilities into compliance with the provisions of C.6. "Maximization of Conveyance of Wastewater to DTW for Treatment". The permittee shall document the evaluation process, the findings of the inspections, the conclusions, and recommendations of the engineering assessment and incorporate this documentation into the CSOPPP.

2. Reporting Requirements

a. Annual Certifications and Reports of Noncompliance

i. Applicability: This section is applicable to all permittees.

ii. The permittee shall submit an Annual Permit Compliance Certification (See Attachment C to this permit for the form of these certifications) that the facility is in compliance with the terms of this permit and the Combined Sewer Overflow Pollution Prevention Plan (CSOPPP), as specified in E.1., except that if there are any incidents of noncompliance, those incidents shall be identified in a separate report of noncompliance transmitted with the annual certifications. The annual certifications, and, if applicable, the reports of noncompliance, shall be submitted in accordance with the procedure specified in v., below.

b. If, after the effective date of the General Permit Authorization, it is discovered that the permittee owns and/or operates CSO Points not included in the initial Request for Authorization, the permittee shall within thirty (30) days submit an RFA for those discharges in accordance with B. of this permit.

c. If, the permittee discovers that it owns and or operates discharges other than a CSO or separate stormwater, the permittee shall immediately discontinue the operation of such discharges and/or immediately apply for the appropriate New Jersey Pollutant Discharge Elimination System Discharge to Surface Water Permit in accordance with the NJPDES (See N.J.A.C. 7:14a-1 et seq.). The Department hereby reserves the right to take any enforcement action for unauthorized or unpermitted discharges.

E. SPECIAL CONDITIONS

1. Preparation and Implementation of the Combined Sewer Overflow Pollution Prevention Plan

a. Applicability: This section is applicable to all permittees

b. General Requirements

i. The permittee shall develop, implement, and maintain a Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) which meets the minimum content requirements of a CSOPPP, as specified in d. below. The CSOPPP shall be developed and implemented in accordance with the schedule specified in c. below.

c. Deadlines and Certifications

i. On or before March 1, 1996, the permittee shall establish and implement a CSOPPP for the portions of the combined sewer system owned and/or operated by the permittee and subject to the requirements of this permit, and shall submit to the Department a properly executed "Combined Sewer Overflow Pollution Prevention Plan Preparation Certification" (See Attachment B).

d. The CSOPPP shall, as minimum, contain the following:

i. Documentation of the procedures used to develop, evaluate and implement Interim Solids/Floatables Control Measures required in C.4.a., including the documentation required in C.4.a.vii.;

ii. Documentation of the procedures used to develop and implement the Long-Term Solids/Floatables Control Measures required in C.4.b., including the selected plan and corresponding implementation schedule;

iii. Documentation of the evaluation process, the findings of the inspections, the conclusions, and recommendations of the Annual Inspection and associated engineering assessments required in D.1.a;

iv. A record of all incidents of noncompliance and copies of all reports associated with each incident of noncompliance required under D.2.;

v. The Facilities Inventory and Assessment required in C.6.c.;

vi. The Proper Operation and Maintenance Plan and Manual(s) required in C.5.c.;

c. Although The Study is considered one comprehensive analysis, the preparation and submission of The Study has been divided into six (6) specific individual components. The permittee shall prepare and submit each of of the components of The Study in accordance with the schedule set forth in Table I. The permittee shall obtain approval from the Municipal Finance & Construction Element prior to proceeding with the development of each subsequent component of the study. The permittee shall submit each of the specified components to:
New Jersey Department of Environmental Protection
Municipal Finance & Construction Element
Bureau of Financing and Construction Permits
P.O. Box 425
Trenton, New Jersey 08625-0425
Each submission shall be transmitted to the Department by the permittee with a signed certification as provided in Attachment D, TRANSMITTED DOCUMENT CERTIFICATION.

d. The permittee shall develop and submit The Study consisting of the individual components as described below:

i. Monitoring Program Proposal and Work Plan
The Monitoring Proposal and Work Plan shall conform with the requirements of "GUIDANCE FOR PREPARATION OF COMBINED WORK/QUALITY ASSURANCE PROJECT PLANS FOR ENVIRONMENTAL MONITORING", dated May, 1984, (OWRS QA-1) prepared by the Office of Water Regulations and Standards, U.S. Environmental Protection Agency, Washington, D.C. 20460. At a minimum the report shall address all of the components, a through i through vi, of The Study.

ii. Service Area Drainage and Land Use Report
The permittee shall provide information used to construct the model and will contain , as a minimum, the information set forth in Table II. All methods of estimation used to produce the data will be presented in graphical, tabularized, and narrative formats as appropriate.

iii. Rainfall Monitoring Study.
The permittee shall perform a Rainfall Monitoring Study that shall include a historic precipitation analysis which, at a minimum, includes the evaluation of climatological records, and the determination of historic and measured rainfall event statistics. The permittee shall establish a rain gage network appropriate for the size of the study area and the model (SWMM) and continuously measure and record rainfall throughout the monitoring period. Precipitation data shall be correlated to other monitoring data in real-time.

iv. Sewer System Inventory and Assessment Report
The permittee shall develop and submit a report that provides both narrative and graphical descriptions of the sewer systems which contribute flow to the permittee's CSO Point. The report shall provide a comprehensive inventory of all elements of the combined sewer system including, but not limited to, all sewer lines, regulators, tide gates, diversion chambers, pumping stations interceptors, trunk sewers, and outfall structures. The report shall include operational status, condition, and hydraulic capacity of all facilities. Detailed drawings of all regulators, tide gates, and flow diversion structures in both plan and profile view are to provided at a minimum. All information shall be qualified by field verifications.

i. " I certify under penalty of law that I have personally examined and am familiar with the information submitted in this RFA and all attached documents, and that this RFA and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining information, I believe that the information is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including the possibility of fine and/or imprisonment."

ii. " I also certify that I have made arrangements for publication, in a daily or weekly newspaper within the area affected by the facility identified in this RFA, of a notice which states that a request for authorization under General Permit No. NJ0105023 for Combined Sewer Systems has been submitted pursuant to N.J.A.C. 7:14A-6.13. This notice identifies the general permit number, the legal name, and address of the owner and/or operator, the facility name and address, and type of facilities, and the receiving surface water(s)."

iii. Name of Newspaper and Date of publication.

iv. " I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

b. The RFA certification (owner and/or Operator) shall be signed as follows:

i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;

ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;

iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

G. ATTACHMENT B: COMBINED SEWER OVERFLOW POLLUTION PREVENTION PLAN CERTIFICATION

1. Combined Sewer Overflow Pollution Prevention Plan (owner and/or operator) Certification

a. "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this "Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) Certification, and any attached documents and in the CSOPPP, referred to in this certification, and that the CSOPPP Certification, and any attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that this CSOPPP certification is true, accurate, and complete and that the CSOPPP has been established in accordance with the requirements of General Permit No. NJ0105023."

b. " I certify that the CSOPPP referred to in this CSOPPP Certification has been established and is being retained at the address sited in this certification, in accordance with Section E, Subpart 1. of General Permit No. NJ0105023, and that this CSOPPP will be fully implemented in accordance with the terms and conditions of that permit."

c. " I am aware that, pursuant to the Water Pollution Control Act N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

d. This certification (owner and/or operator) shall be signed as follows:

i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;

ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;

iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

I. ATTACHMENT D: TRANSMITTED DOCUMENT CERTIFICATION

1. Transmitted Document Certification

a. " I certify under penalty of law that I have personally examined and am familiar with the information within transmittal and all attached documents, whish are individually listed (or described) on this Transmitted Certification, and that this transmittal and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information including the possibility of fine and/or imprisonment."

b. This certification (owner and/or operator) shall be signed as follows:

i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;

ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;

iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

J. ATTACHMENT E: AUTHORIZED REPRESENTATIVE CERTIFICATION (OPTIONAL)

1. Authorized Representative Certification

a. I, the owner and or/ I, the operator authorize the below named person to act as our agent/representative in all matters that pertain to our Request for Authorization, and/or for administrative actions relative to complying with the requirements as they apply to our facilities authorized under the NJPDES General Permit No. NJ0105123.

b. The name and address of the Agent/ Authorized Representative is:

i. NAME:

ii. ADDRESS:

iii. CITY /TOWN:

2. The deadline for submission of Service Area Drainage and Land Use Report: March 1, 1996
3. The deadline for submission of Sewer System Inventory and Assessment Report : March 1, 1996
4. The deadline for submission of Rainfall Monitoring Study : Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
5. The deadline for submission of Combined Sewer Overflow Monitoring Study : Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
6. The deadline for submission of Combined Sewer System Modeling Study: Within 12 months of the permittee's receipt of the Department's written authorization to proceed.

M. TABLE II: COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY INFORMATION TO BE INCLUDED IN THE SERVICE AREA DRAINAGE AND LAND USE REPORT

1. Items of concern regarding the Drainage Area Data for Subcatchment: Area, ground slope, overland flow width, subcatchment length, percent impervious cover.
2. Items of concern regarding the Drainage Area Data for Channel/pipe: Length, slope, shape, pipe configuration which shows connection & flow direction. Connections of significant non-residential users, separately sanitary sewered service area and separate storm water sewer system connections tributary to the combined sewer should be specifically noted.
3. Items of concern regarding the Map Scale: 1:2400
4. Items of concern regarding the Drainage Area Data for Service Area Map: Land use distribution (commercial/industrial, residential, park land, etc., areas served by separate sanitary and storm sewers, or those which contribute storm water, etc.)
5. Items of concern regarding the Drainage Area Data for Pollutant Build-up: Load factor for each land use and pollutant.
6. Items of concern regarding the Sewer Line Data for General: Service area population data.
7. Items of concern regarding the Sewer Line Data for Sewer Pipe: Size, slope, shape, and pipe configuration which shows connections including service area delineation. Location of metering stations, if applicable.
8. Items of concern regarding the Sewer Line Data for Dry Weather Flow: Average dry weather flow, and average concentration of each pollutant.
9. Items of concern regarding the Sewer Line Data for DTW: Capacity, location, average removal rate of each pollutant.
10. Items of concern regarding the Pumping Station for CSO Point: Location, type, and size or control, and relationship to sewer system (interceptor, outfall structure etc.)

N. TABLE III: COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY COMBINED SEWER OVERFLOW MONITORING STUDY MINIMUM MONITORING REQUIREMENTS

1. Chemical Oxygen Demand: Grab Sample
2. Five Day Biochemical Oxygen Demand: Grab Sample

iii. The pathogen control performance objectives applicable to each CSO Point are as follows:
(A) For all CSO Points that discharge into Classification FW2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (A), (E), (F), & (G) of (iv), below.
(B) For all CSO Points that discharge into Classification SE1 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (B), (E), (F), & (G) of (iv), below.
(C) For all CSO Points that discharge into Classification SE2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (B), (C), (E), (F), & (G) of (iv), below.
(D) For all CSO Points that discharge into classification SE3 waters the permittee shall develop and evaluate pathogen control measure that can meet the pathogen control performance objectives (B), (D), (E), (F), & (G) of iv, below.

iv. The pathogen control performance objectives are as specified below:
(A) Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and , Enterococci levels shall not exceed a geometric mean of 33/100 ml, nor shall any single sample exceed 61/100 ml.
(B) Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and, Enterococci levels shall not exceed a geometric mean of 35/100 ml, nor shall any single sample exceed 104/100 ml.
(C) Fecal coliform levels shall not exceed a geometric average of 770/100 ml.
(D) Fecal coliform levels shall not exceed a geometric average of 1500/100 ml.
(E) 50-percent reduction of fecal coliform loadings from current conditions,
(F) 85-percent reduction of fecal coliform loadings from the current conditions, and
(G) 95-percent reduction of fecal coliform loadings from the current conditions.

v. At a minimum, the permittee shall evaluate the implementation of each of the disinfection processes with each of the disinfection technologies listed in APPENDIX B.

c. Cost and Performance Analysis for Combined Sewer Collection and Conveyance Systems operation.

i. Applicability: This section is applicable to all permittees of Combined Sewer Collection and Conveyance Systems.

4. Schedules and Interim Deliverables

a. On or before [Effective Date of Permit(08/01/2004) + 120-Days], the Permittee shall develop and submit to the MF&CE, a Public Participation Work Plan that defines how the permittee will comply with the requirements of O.3.a. An acceptable Public Participation Program Work Plan shall include, as a minimum, all of the information and items identified in APPENDIX A, as appropriate.

b. The permittee shall within sixty (60) days of the Permittee's receipt of the Department's written comments on the Permittee's Public Participation Work Plan modify that submission addressing the Department's written comments and resubmit it to the Department.

c. On or before [Effective Date of Permit(08/01/2004) + 180 Days], unless otherwise directed by the Department, the Permittee shall begin the implementation of the Public Participation Plan.

d. On or before [Effective Date of Permit(08/01/2004) + 12 Months], the Permittee shall submit to the Municipal Finance & Construction Element an Interim Status Report that briefly summarizes how the permittee has complied with the requirements of Subpart O.3.a, b, c, & d. Long Term Control Plan Development.

e. On or before 04/01/2007, the Permittee shall submit to the MF&CE a Cost and Performance Analysis Report. The Cost and Performance Analysis Report shall include, at a minimum, all of the information and items specified in O.3.e, above.

f. On or before 04/01/2007, the Permittee shall submit a Public Participation Report. The Public Participation Report shall:

   i. Summarize the public participation activities conducted;

   ii. Describe the matters on which the public was consulted;

   iii. Summarize the public views, significant comments, concerns and suggestions; and

   iv. Summarize the Permittee's specific responses in terms of the proposed action or an explanation for rejection of proposals made by the public.

g. This permit may be modified or revoked and reissued, as provided pursuant to NJAC 14A-6.13(c), for any valid reason.

APPENDIX A
CONTENTS OF A
PUBLIC PARTICIPATION WORK PLAN

SYNOPSIS:
In developing a Long-term Control Plan, the permittee is required to employ a public participation process that actively involves the affected public in the decision-making process of developing, evaluating and selecting the Long-term CSO controls. The affected public includes ratepayers, industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy these downstream waters, and any other interested persons.

Public participation is that part of the decision-making process through which responsible officials become aware of public attitudes by providing ample opportunity for interested and affected parties to communicate their views. Public participation includes providing access to the decision-making process, seeking input from and conducting dialogue with the public, assimilating public viewpoints and preferences, and demonstrating that those viewpoints and preferences have been considered by the decision-making official. Disagreement on significant issues is likely among government agencies and the diverse groups interested in and affected by public policy decisions. Public agencies should encourage full presentation of issues at an early stage so that they can be resolved and timely decisions can be made. In the course of this process, responsible officials should make special efforts to encourage and assist participation by citizens representing themselves and by others whose resources and access to decision-making may be relatively limited.

A well-designed public participation program should involve the public in the decision-making process as it proceeds. Citizen advisory committees can serve as liaisons between municipal officials, the general public and the NJDEP. Public meetings, public hearings, workshops, and discussion panels provide effective forums to explain the alternatives and to obtain input from as many neighborhood, business, environmental, and civic organizations as possible. These meetings should be well advertised in local papers and on local radio stations. Interested parties should be encouraged to provide verbal and written comments and input. The public participation program should include activities designed to educate the public about the CSO program, informational material distributed through general mailing lists or inserted into monthly utility bills, and media briefings concerning specific projects or issues.

Public Participation during the Development and Evaluation of Alternatives
During the development and evaluation of alternatives, the goal of the public participation program shall be to involve citizens in the process of the development of alternative solutions that protect the waters of the State and consider the financial impacts to the community as a whole. During development and evaluation of CSO control alternatives, the following key information shall be presented to the public as it is developed:

newsletters, mailing, etc. – any of the items listed under consultative and informal mechanisms).

- A month-by-month schedule of activities showing which mechanisms will be used at which points in the technical planning process.

The permittee shall, as a minimum, hold at least one public meeting. The permittee must summarize in the Public Participation Report how the permittee complied with provisions of the permit, including:

- Informing the affected public of the requirements of the permit and the public participation work required by the permit.
- The methodology used in developing, evaluating CSO Control Alternatives including:
- The identification and the development of control alternatives including a list and description of the alternatives selected as representative technologies or alternative control measures selected for further consideration.
- The basis for the preliminary sizing of the control alternatives.
- The alternatives considered, but rejected, and the basis for the rejection.
- The development of preliminary construction/implementation cost estimates, operation, and maintenance costs that have been evaluated.
- The basis for the projected decreases in pollutant loadings, frequencies of CSO events or increased conveyance capacities projected for each control alternative, as appropriate.

Upon conclusion of the development and evaluation of alternatives and as a joint submission with the Control Cost/Performance Analysis, the permittee shall submit a Public Participation Report. The Public Participation Report shall identify the public participation activity conducted; describe the matters on which the public was consulted; summarize the public's views, significant comments, criticisms and suggestions; and set forth the Permittee's specific responses in terms of modifications of the proposed action or an explanation for rejection of proposals made by the public.

APPENDIX B
DISINFECTION TECHNOLOGIES

SYNOPSIS:
The National Combined Sewer Overflow Control Policy requires CSO permittees to undertake a process to develop CSO-LTCPs which includes the evaluation of alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses. The most significant water quality concern directly associated with CSOs is pathogens. Under this general permit, permittees are required to demonstrate cost and performance relationships of various pathogen control alternatives for a broad range of CSO Control Objectives.

REQUIREMENTS:
Permittee shall develop and evaluate a range of CSO control alternatives that will achieve incremental reductions in the loading affecting receiving water bacteria quality in terms of fecal Coliform and Enterococci and report the cost and performance relationships demonstrated by these analysis in both narrative and graphical form. **These studies are intended to be feasibility studies and not intended to be facility planning level analysis.**

To develop a cost and performance curve the range of alternatives shall span between the "no action" alternative (The current condition without application of pathogen controls.) to those controls necessary to meet Surface Water Quality Standards for bacterial quality criteria. At a minimum, the Permittee shall, for each CSO Point, develop and evaluate control alternatives that will provide continuous year round disinfection prior to discharge into surface waters for each pathogen control performance objective specified in a through g, below, that is applicable to each CSO Point depending upon the surface water classification to which the CSO Point discharges.

The pathogen control performance objectives applicable to each CSO Point are as follows:

- For all CSO Points that discharge into Classification FW2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives a, e, f & g.
- For all CSO Points that discharge into Classification SE1 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, e, f & g.
- For all CSO Points that discharge into Classification SE2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, c, e, f & g.
- For all CSO Points that discharge into Classification SE3 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, d, e, f & g.

- Chlorination (Chlorine Dioxide, Sodium Hypochlorite, and Calcium hypochlorite)
- Ozonation, and
- Ultraviolet Radiation

Permittees shall consider alternative control strategies that consolidate groups of CSO Points for centralized treatment and discharge.

In the development of cost estimates all process configurations must include costs associated with Solids/Floatables Control and dechlorination facilities, if needed. All discharges from CSO Points remaining after application of control measures must conform to the current Solids/Floatable Control requirement and the State Water Quality Standard for chlorine produced oxidants.

As a minimum, permittees with Combined Sewer Overflow Points are required to develop and evaluate high-rate disinfection processes utilizing the three disinfecting technologies, listed below, with each of the following rapid primary treatment processes:

1. **Screening Technology and High-rate Disinfection**
   Screening ⇒ High-rate Disinfection ⇒ Discharge

2. **Vortex/Swirl Separation Technology and High-rate Disinfection**
   Vortex/Swirl Separation ⇒ High-rate Disinfection ⇒ Discharge

3. **Ballasted Flocculation Technology and High-rate Disinfection**
   Ballasted Flocculation ⇒ High-rate Disinfection ⇒ Discharge

APPENDIX C
MINIMUM CONTROL MEASURES FOR COMBINED SEWER COLLECTION AND CONVEYANCE SYSTEMS

SYNOPSIS:

The Permittee shall develop and evaluate controls that will result in the reduction of the frequency of CSO discharge events based on an average hydrologic year to each the frequencies of occurrence listed below. For the purposes of developing cost and performance relationships permittees are directed to use the 1988 recorded rainfall at JFK Airport as the average hydrologic year. **(The precipitation data set is available at the Division of Water Quality's website for permitting and technical information at http://www.state.nj.us/dep/dwq/gps.htm.)** The Permittee shall develop alternatives that achieve each of the targeted frequencies of discharge events per year without increasing the peak volumetric flow rate of wastewater conveyed to the Domestic Treatment Works (DTW) for treatment. For the purposes of this section, the range of frequencies of occurrence of CSO discharges shall, as a minimum, include the following:

- zero overflow events per year,
- an average of three overflow events per year,
- an average of seven overflow events per year,
- an average of twelve overflow events per year, and
- an average of twenty overflow events per year.

The applicability or suitability of any particular control process/technology depends upon a number of considerations and is likely to vary from location to location..

The permittee is encouraged to explore other control process and technologies and incremental levels of control not specifically mentioned in the permit.

These studies are intended to be feasibility studies and not intended to be facility planning level analysis. In these feasibility studies the permittee is required to investigate control technologies and the development of control alternatives including the preliminary sizing of the control alternatives; assessing implementation feasibility; developing preliminary construction/implementation cost estimates, operation, and maintenance costs; developing Present Worth Cost of the most cost effective and practical control strategies and the associated projected pollutant loadings reductions. Permittees are not required to perform detailed environmental and archeological assessments or to select a particular control strategy.

REQUIREMENTS:

As a minimum, permittees with Combined Sewer Collection and Conveyance Systems must develop and evaluate the Collection System Controls and Storage Technologies listed below.

APPENDIX D
MINIMUM CONTROL MEASURES FOR COMBINED SEWER COLLECTION AND CONVEYANCE SYSTEMS AND COMBINED SEWER OVERFLOW CONTROL FACILITIES

SYNOPSIS:

Permittees of Combined Sewer Collection and Conveyance Systems and Combined Sewer Overflow Control Facilities shall develop and evaluate Control Measures that shall result in an increase in the conveyance of wastewater from CSO Control Facilities to the DTW for treatment. The permittee shall develop and evaluate control measures that will achieve the performance objective for each of the increments listed below based upon current average dry weather flow tributary to each CSO Control Facility. At a minimum, Permittees must develop and evaluate each of the control measures listed below.

a. Two times the average dry weather peak volumetric flow rate of the CSS area,

b. Four times the average dry weather peak volumetric flow rate of the CSS area,

c. Six times the average dry weather peak volumetric flow rate of the CSS area, and

d. Eight times the average dry weather peak volumetric flow rate of the CSS area.

The applicability or suitability of any particular control process/technology depends upon a number of considerations and is likely to vary from location to location. The following are minimum requirements. The permittee is encouraged to explore other control process and technologies and levels of control not specifically mentioned in the permit.

These studies are intended to be feasibility studies and not intended to be facility planning level analysis. In these feasibility studies the permittee is required to investigate control technologies and the development of control alternatives including the preliminary sizing of the control alternatives; assessing implementation feasibility; developing preliminary construction/implementation cost estimates, operation, and maintenance costs; developing Present Worth Cost of the most cost effective and practical control strategies and the associated projected pollutant loadings reductions. Permittees are not required to perform detailed environmental and archeological assessments or to select a particular control strategy.

REQUIREMENTS:

At a minimum, permittees with Combined Sewer Collection and Conveyance Systems must develop and evaluate the Collection System Controls and Storage Technologies listed below.

Real Time Controls –

Real-Time Control (RTC) programs can provide integrated control of regulators, outfall gates, and pump station operations based on anticipated flows from individual rainfall events, with feedback control adjustments based on actual flow conditions within the system. Computer models associated with the RTC system allow an evaluation of

APPENDIX E
COST AND PERFORMANCE ANALYSIS REPORT

SYNOPSIS:

Permittees are required to develop control alternatives based on the ability to achieve loading reduction in terms of fecal Coliform and Enterococci, reductions in the frequency of CSO events, and incremental increases in the conveyance of wastewater from CSO Control Facilities to DTW for treatment. Permittee shall determine and report loading reductions for fecal Coliform, Enterococci and for nutrients and oxygen-demanding substances that may result incidental to the application of the control measures. Oxygen-demanding substances shall be reported using the parameters CBOD5 and Total Kjeldahl Nitrogen (TKN). Phosphorous and Total Nitrogen shall be used for nutrient parameters.

The Permittee shall develop and submit a Cost and Performance Analysis Report that demonstrates the relationships among the set of CSO control alternatives in terms of a specified performance objective and the projected construction/implementation costs for each of the Permittee's CSO Points and/or conveyance facilities as applicable.

REQUIREMENTS:

The CSO Control Cost and Performance Analysis Report shall include:

- A report summarizing the permittees compliance with provisions of Sections O.3.b. through O.3.e
- Documentation of the methodology used in developing and evaluating CSO Control Alternatives including:
  - Documentation of the identification and the development of control alternatives including a list and description of the alternatives selected as representative technologies and/or alternative control measures selected for further consideration.
  - Documentation of the basis for the preliminary sizing of the control alternatives.
  - A summary of the alternatives considered, but determined infeasible, and the basis for the rejection.
  - Documentation of the development of preliminary construction/implementation cost estimates, operation, and maintenance costs.
  - Documentation of the basis for the anticipated decrease in pollutant loadings projected for each control alternative.
- CSO Controls Alternatives Cost and Performance Curves for the CSO Controls Alternatives that were evaluated.
  - Cost and Performance Curves for the evaluation of Disinfection Control Measures shall consist of narrative and graphical presentations of the relationship between the specified CSO Control Objectives and the Present Worth Cost of the most cost effective and practical control strategies. Cost and Performance Curves shall demonstrate the loadings reduction potential in terms of Fecal Coliform and Enterococci, CBOD5, Total Kjeldahl Nitrogen (TKN), Total Phosphorous and Total Nitrogen.

the course of the project design life. The value of the land should then be added to the depreciated value of the facility to obtain the total salvage value.

Continuous Simulation Modeling Analysis

For the purposes of developing cost and performance relationships permittees are directed to use the 1988 recorded rainfall at JFK Airport for continuous simulation modeling. An analysis of recorded rainfall at JFK Airport determined 1988 to be representative of overall long-term average conditions in terms of total volume of rainfall and storm duration. **The precipitation data set is available at the Division of Water Quality's website for permitting and technical information at http://www.state.nj.us/dep/dwq/gps.htm.**

GENERAL PERMIT NO NJ0105023
ATTACHMENT A:
RFA CERTIFICATION

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Request for Authorization (RFA) and all attached documents, and that this RFA and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including the possibility of fine and/or imprisonment."

"I also certify that I have made arrangements for publication, in a daily or weekly newspaper within the area affected by the facility identified in this RFA, of a notice which states that a request for authorization under General Permit No. NJ0105023 for Combined Sewer Systems has been submitted pursuant to N.J.A.C. 7:14A-6.13. This notice identifies the general permit number, the legal name, and address of the owner, the facility name and address, and the type of facilities, and the receiving surface water(s)."

Name of Newspaper: _____

Date of publication: ____/____/____

"I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

OWNER'S CERTIFICATION

CORPORATION:
(responsible corporate officer)

_____ _____
(signature) (print name)
___/___/___ (date)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ _____
(signature) (print name)
___/___/___ (date)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ _____
(signature) (print name)
___/___/___ (date)

Name of Permittee:
Authorization Number:

GENERAL PERMIT NJ0105023
ATTACHMENT B:
COMBINED SEWER OVERFLOW POLLUTION PREVENTION PLAN CERTIFICATION

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) Certification, and any attached documents and in the CSOPPP, referred to in this certification, and that the CSOPPP Certification, and any attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that this CSOPPP Certification is true, accurate, and complete and that the CSOPPP has been established in accordance with the requirements of General Permit No. NJ0105023."

"I certify that the CSOPPP referred to in this CSOPPP Certification has been established and is being retained at the address listed on the reverse side of this certification, in accordance with Part V, Subpart A of General Permit No. NJ0105023, and that this CSOPPP will be fully implemented in accordance with the terms and conditions of that permit."

"I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

OWNER'S CERTIFICATION

CORPORATION:(responsible corporate officer)

_____ (signature)
___/___/___ (date)

_____ (print name)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ (signature)
___/___/___ (date)

_____ (print name)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ (signature)
___/___/___ (date)

_____ (print name)

The CSOPPP is retained at the following address and is available for inspection.

Name of Location:	
Number and Street:	
City or Town:	
State & Zip Code:	

Name of Permittee:

Authorization Number:

GENERAL PERMIT NJ0105023
ATTACHMENT C:
ANNUAL PERMIT COMPLIANCE CERTIFICATION

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Annual Permit Compliance Certification and all attached documents, including any report on non-compliance. Additionally, I certify that this Annual Permit Compliance Certification, and all attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that this Annual Permit Compliance Certification, and all attached documents, is true, accurate and complete.

"I certify under penalty of law that the facilities regulated under NJPDES Permit No. NJ0105023, and authorized under the below listed Authorization Number, have been inspected in accordance with the terms and conditions of the General Permit No. NJ0105023 and that an evaluation of the records of activities, since the previous annual permit compliance evaluation, if any, for these facilities has been performed. I certify that (check appropriate response) the facilities:

[___] Are in complete compliance with the terms, conditions, and compliance schedules contained in the permit and that the annual inspection report (see Part IV of General Permit No. NJ0105023) is and will be maintained as part of the CSOPPP, as required by Part IV of General Permit No. NJ0105023.

[___] Were not in compliance with all of the terms, conditions and compliance schedules contained in General Permit No. NJ0105023 and that a report of noncompliance (see Part IV of General Permit No. NJ0105023) has been submitted to the NJDEP with this Annual Permit Compliance Certification.

"I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

OWNER'S CERTIFICATION

CORPORATION:(responsible corporate officer)

_____ (signature) ___/___/___ (date)

_____ (print name)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ (signature) ___/___/___ (date)

_____ (print name)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ (signature) ___/___/___ (date)

_____ (print name)

Submission Address: New Jersey Department of Environmental Protection
Municipal Finance and Construction Element
Bureau of Financing and Construction Permits
Attn. CSO Program
P.O. Box 425
Trenton, New Jersey 08625-0425

Name of Permittee:
Authorization Number:

GENERAL PERMIT NJ0105023
ATTACHMENT D
TRANSMITTED DOCUMENT CERTIFICATION

"I certify under penalty of law that I have personally examined and am familiar with the information submitted with this transmittal and all attached documents, which are individually listed (or described) on this Transmitted Document Certification, and that this transmittal and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information, including the possibility of fine and/or imprisonment." (See N.J.A.C. 7:14A-4.9)

OWNER'S CERTIFICATION
CORPORATION:(responsible corporate officer)

_____ _____
(signature) (print name)
___/___/___ (date)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ _____
(signature) (print name)
___/___/___ (date)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ _____
(signature) (print name)
___/___/___ (date)

Name of Permittee:

Authorization Number:

GENERAL PERMIT NJ0105023
ATTACHMENT E
AUTHORIZED REPRESENTATIVE CERTIFICATION
(OPTIONAL)

I, the owner authorize the below named person to act as our agent/ representative in all matters that pertain to our Request for Authorization, and/or for administrative actions relative to complying with the requirements as they apply to our facilities authorized under the NJPDES General Permit No. NJ0105023.

The name and address of the Agent/Authorized Representative is:

NAME:	
ADDRESS:	
CITY/TOWN:	
STATE & ZIP CODE:	
BUSINESS TELE.	

OWNER'S CERTIFICATION

CORPORATION:
(responsible corporate officer)

_____ _____
(signature) (print name)
___/___/___ (date)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ _____
(signature) (print name)
___/___/___ (date)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ _____
(signature) (print name)
___/___/___ (date)

I, the undersigned, agree to serve as agent/authorized representative for the above listed owner.

_____
(Signature of Agent/Authorized Representative)

Name of Permittee:
Authorization Number:

GENERAL PERMIT NJ0105023
ATTACHMENT F
INTERIM SOLIDS/FLOATABLES CONTROL MEASURES IMPLEMENTATION CERTIFICATION

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Interim Solids/Floatables Control Measures Implementation Certification, the Interim Solids/Floatables Control Measures Implementation Schedule, and any attached documents, and that the Interim Solids/Floatables Control Measures Implementation Certification, and any attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that this Interim Solids/Floatables Control Measures Implementation Certification and Interim Solids/Floatables Control Measures Implementation Schedule are true, accurate, and complete and that the Interim Solids/Floatables Control Measures have been developed and implemented in accordance with Interim Solids/Floatables Control Plan, approved by the NJDEP, and with the requirements of General Permit No. NJ0105023."

"I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."

OWNER'S CERTIFICATION

CORPORATION:(responsible corporate officer)

_____ (signature)
___/___/___ (date)

_____ (print name)

PARTNERSHIP OR SOLE PROPRIETORSHIP:
(general partner or proprietor)

_____ (signature)
___/___/___ (date)

_____ (print name)

GOVERNMENT OR PUBLIC AGENCY:
(principal executive officer or ranking elected official)

_____ (signature)
___/___/___ (date)

_____ (print name)

Name of Permittee:

Authorization Number:

State of New Jersey
Department of Environmental Protection
Division of Water Quality
Municipal Finance & Construction Element
401 East State Street
PO Box 425
Trenton, New Jersey 08625-0425

GENERAL PERMIT FOR COMBINED SEWER SYSTEMS
NJPDES PERMIT NO. NJ0105023
REQUEST FOR AUTHORIZATION

Please read and follow all of the instructions CAREFULLY.
Sign, date, and notarize where indicated. PRINT OR TYPE all information.

1. Facility	
Individual Authorization Number	
Name (Facility)	
Mailing Address (Number & Street)	
City	
State & Zip Code	
2. Authorized Representative	
Name	
Mailing Address (Number & Street)	
City	
State & Zip Code	
Business Telephone Number	
3. Facilities and/or Activities to be Authorized (Mark as applicable)	a. _____ Own and/or operate a Combined Sewer Collection and/or Conveyance System b. _____ Own and/or operate Combined Sewer Overflow Point (s) c. _____ Own and/or operate Combined Sewer Overflow Control Facility

GENERAL PERMIT FOR COMBINED SEWER SYSTEMS
NJPDES PERMIT NO. NJ0105023

REQUEST FOR AUTHORIZATION

4. Owner	
Legal Name	
Mailing Address (Number & Street)	
City	
State & Zip Code	
Business Telephone Number	
Identification	( ) Federal Agency ( ) State Agency ( ) Other Public Agency ( ) Private Entity
5. Name and address of Domestic Treatment Works to which wastewater is conveyed for treatment	
6. Name and address of Wastewater Management Planning Agency	

REQUEST FOR AUTHORIZATION

ATTACHMENTS

The following information must be provided with the RFA submission:

1. A listing of all permits or construction approvals received or applied for by the applicant at the site under any of the following programs;
    a. Hazardous Waste Management program under RCRA;
    b. NJPDES permits or Treatment Works Approvals under the State or Federal;
    c. Prevention of Significant Deterioration (PSD) Program under the Clean Air Act;
    d. Non-attainment program under the Clean Air Act;
    e. National Emission Standards for Hazardous Pollutants (NESHAPS) pre-construction approval under the Clean Air Act;
    f. Ocean dumping permits under the Marine Protection Research and Sanctuaries Act;
    g. Dredge or fill permits under Section 404 of the Federal Act;
    h. Other relevant environmental permits, including other State and Federal permits; and
    i. Other permits such as stream encroachment or wetlands permits.

2. Identification of administrative orders, administrative consent orders, judicial orders, judicial consent orders, notices of violations, complaints filed, or other corrective or enforcement action(s) required by any governmental agencies with regard to the operation of the applicant at that site concerning pollution within the previous five (5) years or that are currently applicable to the site or operations of the facilities.

3. For each combined sewer overflow point (CSO Point) provide a schematic diagram showing the configuration of the combined sewer overflow control facilities associated with each CSO Point to the combined sewer system and the combined sewer collection and conveyance system. This diagram should show the relationships of the CSO Point to portion of the combined sewer system where the wastewater is collected, the portion of the combined sewer overflow control facility where the wastewater is diverted from the combined sewer overflow collection and conveyance facilities (i.e., the location of the regulator or other diversion structure), and the CSO Point at which the wastewater is discharged into the receiving water body (i.e., the end of the outfall structure).

4. A copy of the portion of the U.S. Geological Survey Topographic Map, 7.5 minute quadrangle series, showing the location of the facility and the name of the quadrangle(s). Owners and/or operators shall show the following details, as applicable to their facilities/activities, the delineated service area of the collection systems, the alignment of conveyance systems (interceptors, force mains, trunk sewers, etc.), the location and/or alignment of combined sewer overflow control facilities (regulators) and the corresponding combined sewer overflow points (ends of outfalls and other discharge structures).

5. A brief narrative description of the facility(s) as a combined sewer collection and/or conveyance system, combined sewer overflow point, and/or combined sewer overflow control facility.

6. A photocopy of the publication of the public notice required under Part I.B.3.o and B.5.a of the General Permit as it appeared in the publication. Indicate the name and date of the publication, the section, and page number where the public notice appeared.

Submit all RFAs to:

Municipal Finance & Construction Element
Engineering/CSO Section
401 East State Street
PO Box 425
Trenton, New Jersey 08625-0425

GENERAL PERMIT FOR COMBINED SEWER SYSTEMS
NJPDES PERMIT NO. NJ0105023
REQUEST FOR AUTHORIZATION INSTRUCTIONS

Section 1. *Facility*
A "facility" is any component or appurtenance of any sanitary or stormwater sewer system. It is a distinct activity or installation that operates under the control or jurisdiction of a single responsible organization and conveys or discharges pollutants from one or more discharge points. Name the facility/activity as it is officially or legally referred to in order to distinguish it from similar entities, if any, in the same geographical area. Do not use colloquial names as a substitute for the official name. Enter the individual authorization number and the address where the facility is located.

Section 2. *Authorized Representative*
Provide the name, address and business telephone number of the person who is thoroughly familiar with the facts reported on the forms and who can be contacted by the United States Environmental Protection Agency, NJDEP, and other State offices, and other agencies involved in the permit application processing and review and the applicants compliance with the terms and conditions of the permit. All authorized representatives, other than the owner of the facility, must be identified and designated using the Authorized Representative Certification (ATTACHMENT E). Similarly, a change in the identification of the Authorized Representative must be notified by the submission of a properly executed Authorized Representative Certification with the new representative identified.

Section 3. *Facilities and/or Activities to be Authorized*
Indicate the type of activity or facility the application is for by placing an X or a check in the appropriate response. Mark as many as applies to the applicant. The following definitions will assist in the determination:

"*Combined Sewer Collection and Conveyance System*" means any portion of a Combined Sewer System excluding the Combined Sewer Overflow Control Facilities.

"*Combined Sewer Overflow Control Facilities*" means any portion of the combined sewer system beginning from and including the point at which flows are diverted within the collection and conveyance system from proceeding to the treatment facility and ending at the CSO Point where the CSO is directed to the receiving waters. These portions of the combined sewer system include, but are not limited to, the regulator, the outfall structure, tide gate, and other appurtenances.

"*Combined Sewer Overflow Point*" means a discrete point in a combined sewer system that provides for the release of combined sewer overflows (See N.J.A.C. 7:22A-1.4).

"*Combined Sewer System*" means a sewer system that is designed to carry sanitary sewage at all times and that also is designed to collect and transport storm water from streets and other sources, thus serving a combined purpose (See N.J.A.C. 7:14A-1.2).

Section 4. *Owner*
Provide the legal name, address, and business telephone number of the owner of the facility. In the space provided, mark the description that best fits the applicant as a federal, state, other public agency or private entity.

Section 5. *Domestic Treatment Works*
Give the legal name and address of the Domestic Treatment Works to which wastewater is intended to be conveyed for treatment or which provides wastewater treatment for wastewater generated in the sewer service area in which the facility/activity is located.

Section 6. *Wastewater Management Planning Agency*
Provide the name and address of the governmental unit or other person that has "Wastewater management plan responsibility" for the area in which the applicant's facility/facilities are located (See 7:15-5.3 Wastewater management planning agencies).

REQUEST FOR AUTHORIZATION (RFA)
PUBLIC NOTICE GUIDANCE

REQUIREMENT : (See Part I.B.3.o and B.5.a of the General Permit)
The permittee shall publish a notice in a daily or weekly newspaper within the area affected by the permitted facility stating that a request for authorization under General Permit No. NJ0105023 for Combined Sewer Systems has been submitted in accordance with N.J.A.C. 7:14A-6.13 (d). This notice shall also identify the legal name and address of the owner, the facility name and address, and type of facility and discharges. A certification stating that arrangements for such notification have been made is contained in Attachment A (RFA Certification) and shall be signed and submitted as part of the RFA.

EXAMPLE OF PUBLIC NOTICE
"A request for authorization under General Permit No. NJPDES No. NJ 0105023 has been submitted in accordance with N.J.A.C. 7:14A-4.2(e) 3 to the New Jersey Department of Environmental Protection by the City of Greenway for the Combined Sewer System and Combined Sewer Overflow Points that it owns and operates listed below."

Legal Name of Owner: City of Greenway
Owner Address: [INSERT LEGAL ADDRESS]

Name of Facility	Type of Facility	Receiving Waterbody
CSO Point No. 002, Albany Street	In-Line Netting Facility	Arthur Kill/Crane Creek

REQUIRED SUBMISSION:
A photocopy of the public notice as it appeared in publication. Indicate the name and date of the publication, the section, and page number where the public notice appeared.

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT NO. NJ0105023
REQUEST FOR AUTHORIZATION
FORM A: SCHEDULE OF COMBINED SEWER OVERFLOW POINTS

Discharge Serial Number	CSO Point Name (If none, use the names of the street(s) nearest the CSO Point.)	Latitude & Longitude of the end of the CSO Point	Name of the Receiving Waterbody	Description of any type of treatment to CSO prior to discharge
(EXAMPLE)001	East State Street & Clinton Avenue	40° 39' 50" - 74° 07' 57"	Assunpink Creek	2-inch Bar Screen Chlorination

Name of Permittee: _____

Individual Authorization Number: NJPDES No. NJ_____

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT NO. NJ0105023

FORM B

SOLIDS/FLOATABLES CONTROL MEASURES IMPLEMENTATION CERTIFICATION SCHEDULE

(This Form is to accompany the submission of an Interim Solids/Floatables Control Measures Implementation Certification (ATTACHMENT F))

Discharge Serial Number	CSO Point Name (If none use the names of the street(s) nearest the CSO Point)	Description of the type of Solids/Floatables control measure	Date of Implementation/Operation
EXAMPLE 001	*East State Street & Clinton Avenue*	*End-of-pipe flow netting 0.5 inch net weave*	*July 1, 1994*

Name of Permittee: _____

Authorization Number: _____

GENERAL PERMIT NO. NJ0105023
TABLE I
COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY
SCHEDULE OF ACTIVITIES

STUDY COMPONENT	*DEADLINE FOR SUBMISSION*
Monitoring Program Proposal and Work Plan	March 1, 1996
Service Area Drainage and Land Use Report	March 1, 1996
Sewer System Inventory and Assessment Report	March 1, 1996
Rainfall Monitoring Study	Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
Combined Sewer Overflow Monitoring Study	Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
Combined Sewer System Modeling Study	Within 12 months of the permittee's receipt of the Department's written authorization to proceed.

GENERAL PERMIT NO. NJ0105023
TABLE II
COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY
INFORMATION TO BE INCLUDED IN THE SERVICE AREA DRAINAGE AND LAND USE REPORT

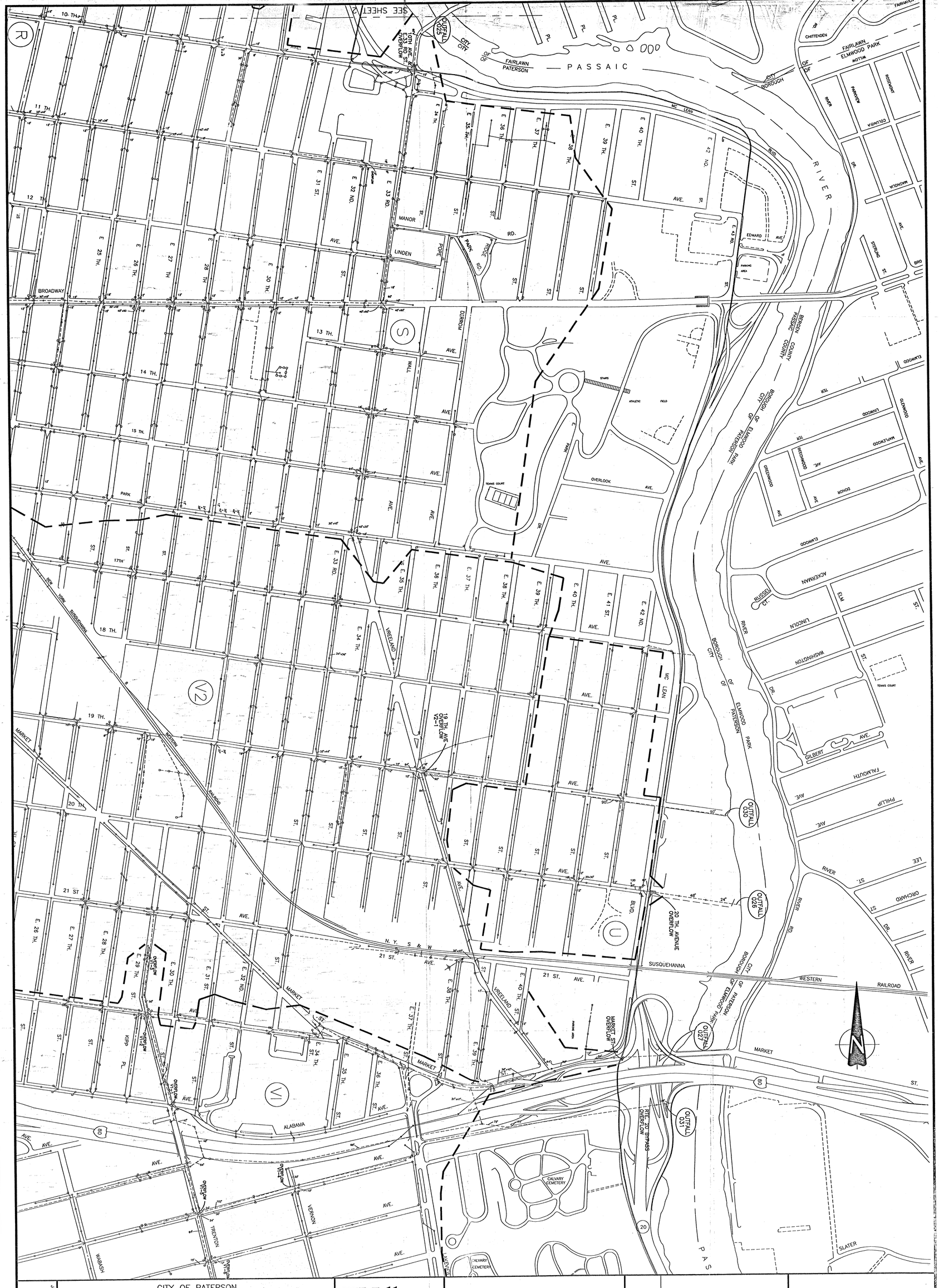
Drainage Area Data	*Items of concern*
Subcatchment:	Area, ground slope, overland flow width, subcatchment length, percent impervious cover.
Channel/pipe:	Length, slope, shape, pipe configuration which shows connection & flow direction. Connections of significant non-residential users, separately sanitary sewered service area and separate storm water sewer system connections tributary to the combined sewer should be specifically noted.
Map Scale:	1:2400
Service Area Map:	Land use distribution (commercial/industrial, residential, park land, etc. ,areas served by separate sanitary and storm sewers, or those which just contribute storm water, etc.)
Pollutant Build-up:	Load factor for each land use and pollutant.
Sewer Line data:	
General:	Service area population data.
Sewer pipe:	Size, slope, shape, and pipe configuration which shows connections including service area delineation. Location of metering stations, if applicable.
Dry weather flow:	Average dry weather flow, and average concentration of each pollutant.
DTW:	Capacity, location, average removal rate of each pollutant.
Pumping stations:	Location capacity of dry well, pumps, etc.
CSO Point:	Location, type and size or control, and relationship to sewer system (interceptor, outfall structure etc.)

GENERAL PERMIT NO. NJ0105023
TABLE III
COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY
COMBINED SEWER OVERFLOW MONITORING STUDY
MINIMUM MONITORING REQUIREMENTS

PARAMETER	*SAMPLE TYPE*
Chemical Oxygen Demand	Grab
Five Day Biochemical Oxygen Demand	Grab
Fecal Coliform	Grab
Suspended Solids	Grab
Settleable Solids	Grab
Total Dissolved Solids	Grab
Nitrogen Series: ammonia, nitrites, nitrates, Total Kjeldahl Nitrogen.	Grab
Phosphorous Series: Orthophosphate & Total Phosphorous	Grab
Temperature	Grab
Volumetric Flow Rate	Continuous Recording
pH	Grab
Hardness	Grab
Salinity	Grab
Toxic-Metals (To be specified by the Department)	Composite

APPENDIX F

CSO DISCHARGE POINTS
LOCATION MAPS



CITY OF PATERSON
CSO OPERATIONS & MAINTENANCE MANUAL

CSO DISCHARGE POINT LOCATION MAP

SHEET 3 OF 3

1-C

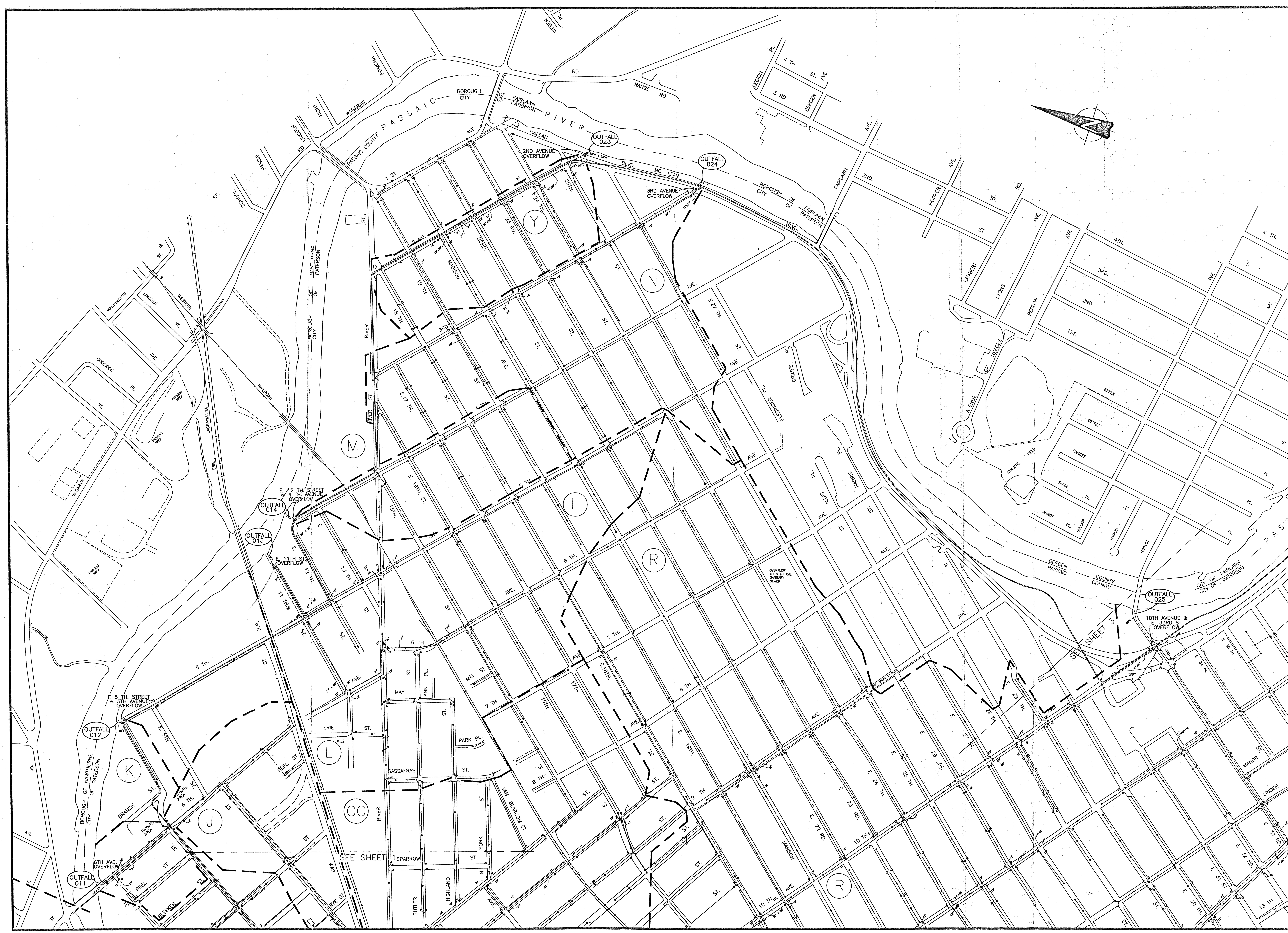
Killam Associates a Consulting Engineers
27 Bleeker Street
Millburn, New Jersey 07041

Designed	Drawn	Checked	Approved	Date

Date _____

Date	Revision

JOB No.
B/O Total



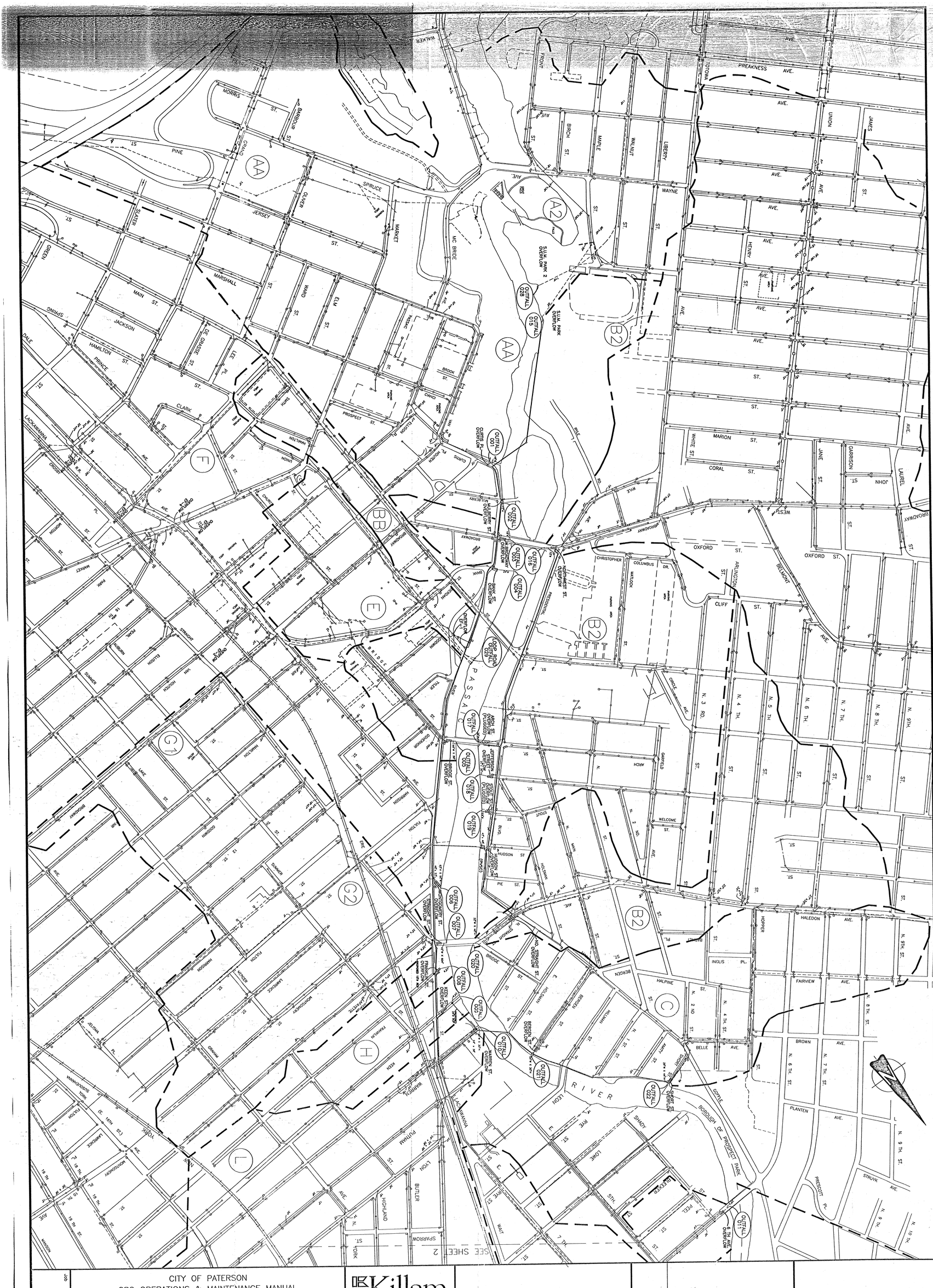
CITY OF PATERSON
CSO OPERATIONS & MAINTENANCE MANUAL

CSO DISCHARGE POINT LOCATION MAP

SHEET 2 OF 3

Killam
Associates Consulting Engineers
27 Bleeker Street
Millburn, New Jersey 07041

1-6



CITY OF PATERSON
CSO OPERATIONS & MAINTENANCE MANUAL

CSO DISCHARGE POINT LOCATION MAP

SHEET 1 OF 3

1-A

Killam Associates Consulting Engineers
27 Bleeker Street
Millburn, New Jersey 07041

Designed	Drawn	Checked	Approved	Date

Date _____

Date | Revision

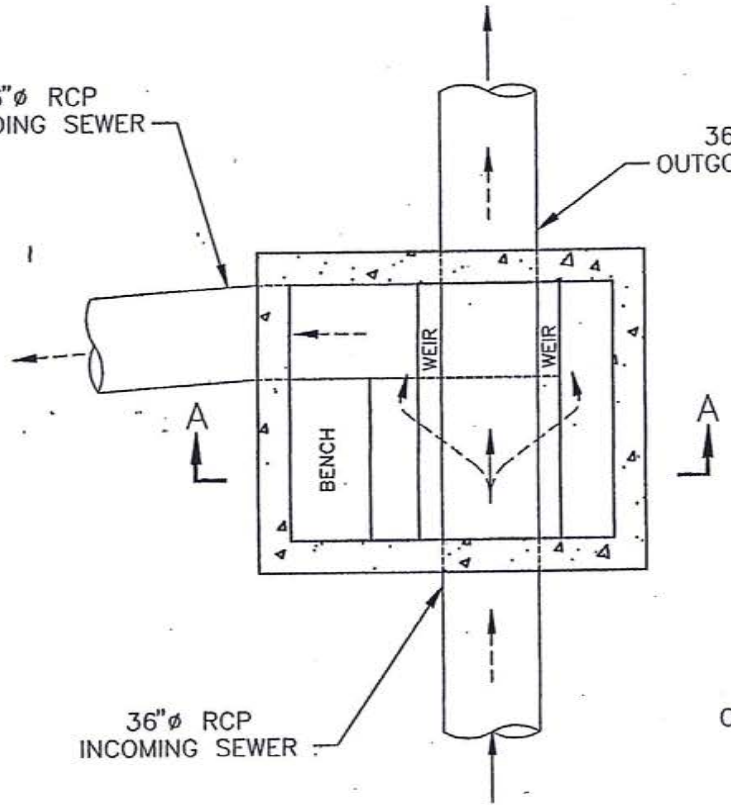
APPENDIX G

LIST OF EQUIPMENT
OPERATIONS AND MAINTENANCE MANUALS
INCORPORATED BY REFERENCE

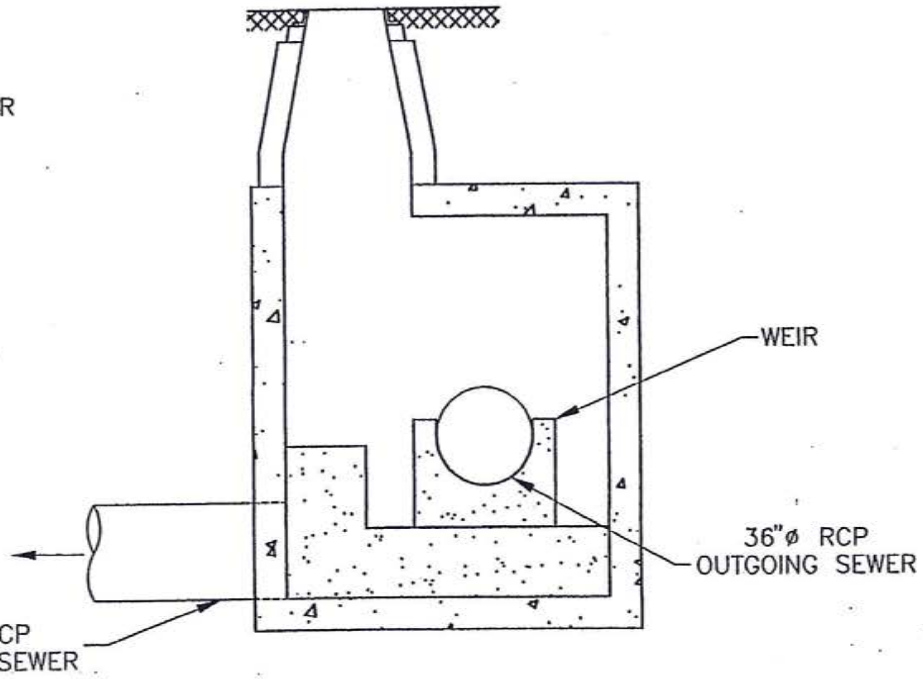
- Romag High-Capacity Screen (undated)
- CSO Facility 016 O&M Manual 07/06/2005
- Rodney Hunt Flap Valve 12/05/2007
- Ashbrook-Simon-Hartley
  Coplaxtix Flap Val O&M Manual 08/30/2010
- P.J. Hannah Net Cassette O&M Manual (undated)
- Grande-Accuscreen O&M Manual 01/29/2007
- Fresh Creek Netting System 08/18/2005
  08/23/2010
- Seprotech Net Cassette O&M Manual (undated)
- Whipps Flexible Flap Gate O&M Manual (undated)

APPENDIX H

PLATES



PLAN VIEW



SECTION A–A

LEGEND

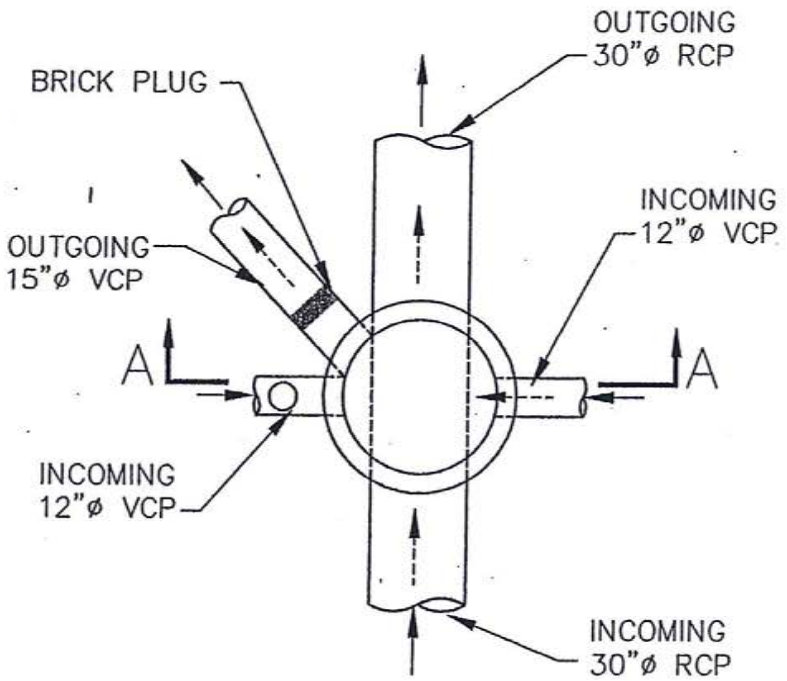
← DRY WEATHER FLOW

←--- WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–1
WESTSIDE PARK

DATE SHEET

Killam



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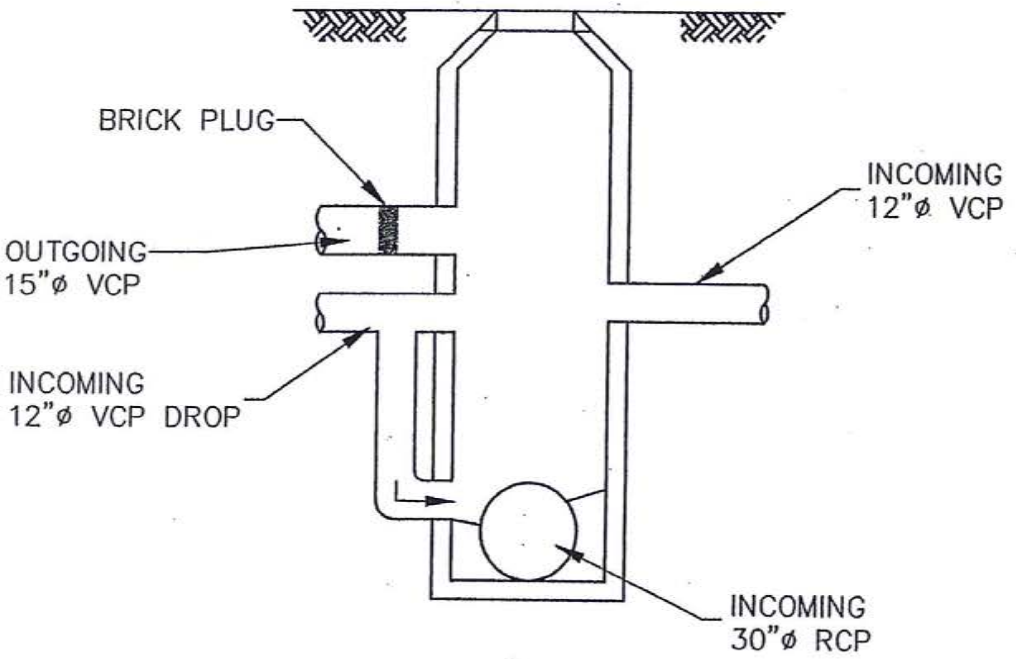


SECTION A–A

LEGEND

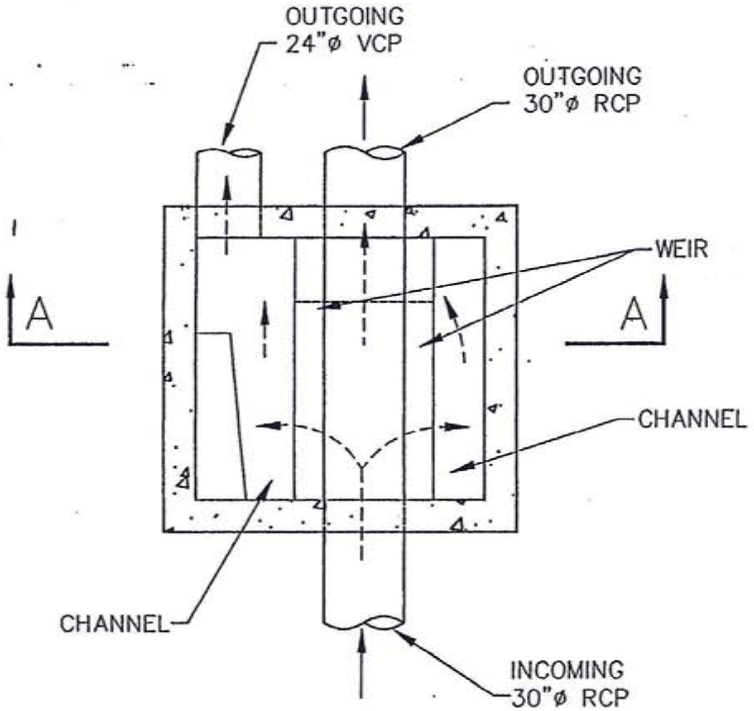
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–2
UNION & DON BOSCO

DATE 06/24/96 SHEET

Killam



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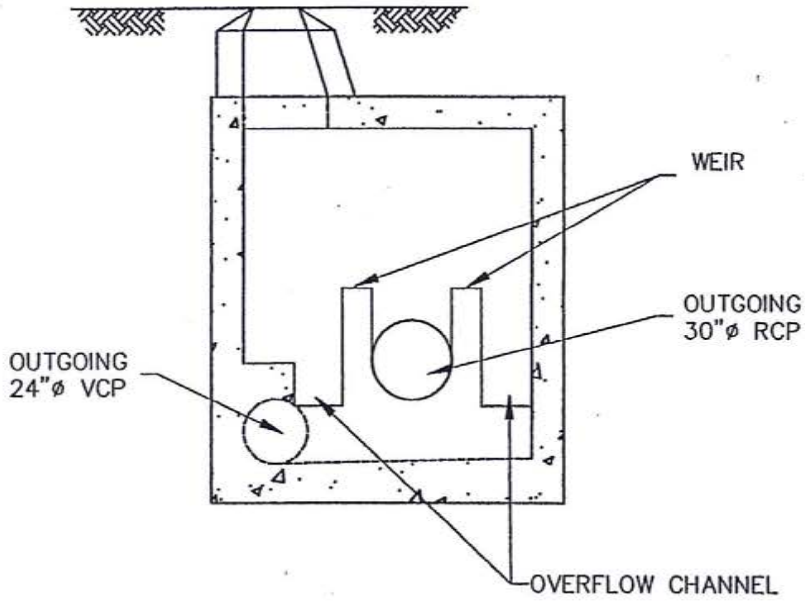


SECTION A–A

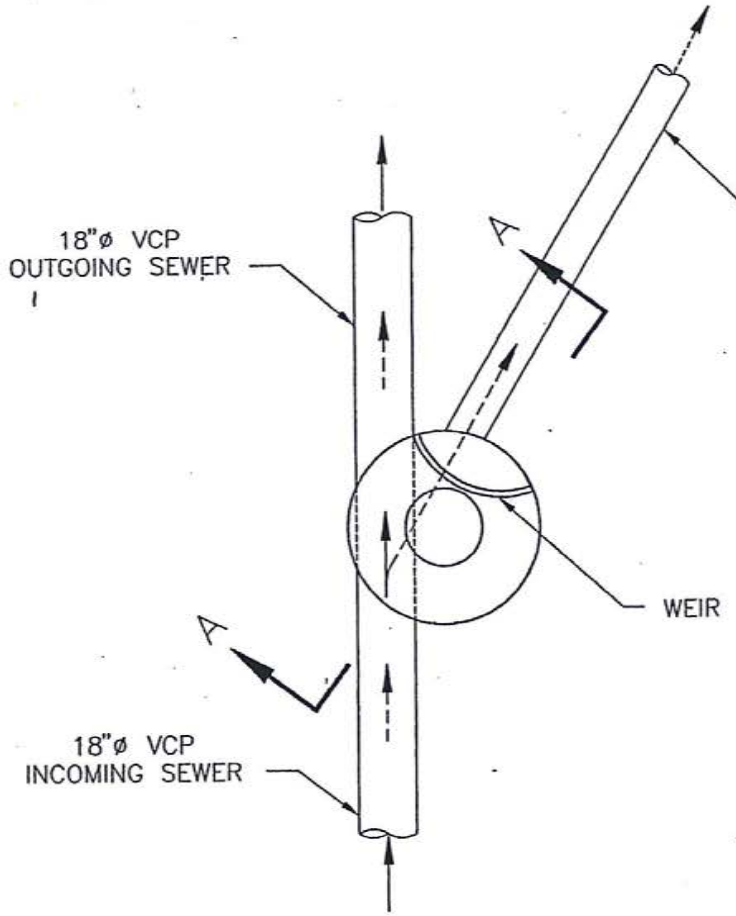
LEGEND

DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–3
CROSBY & SHERWOOD AVE.

DATE	SHEET
06/24/96	Killam



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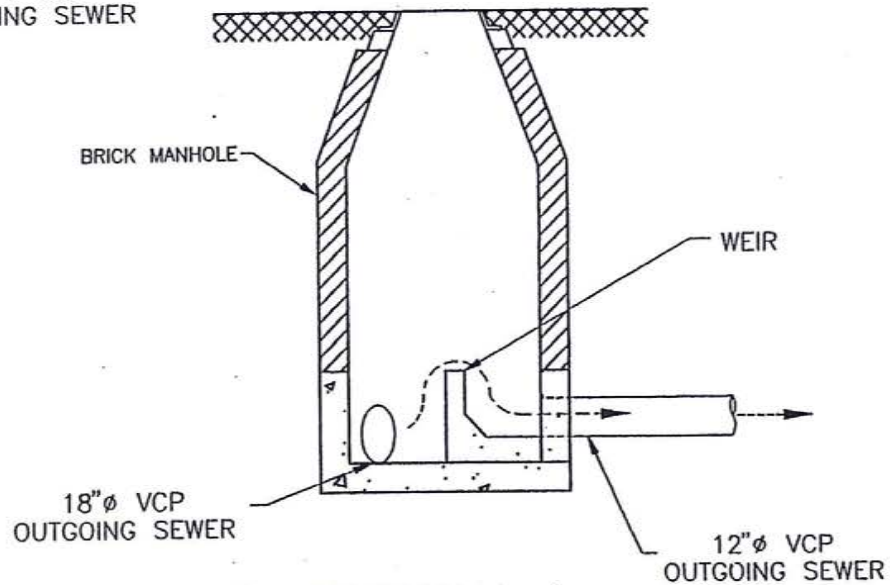


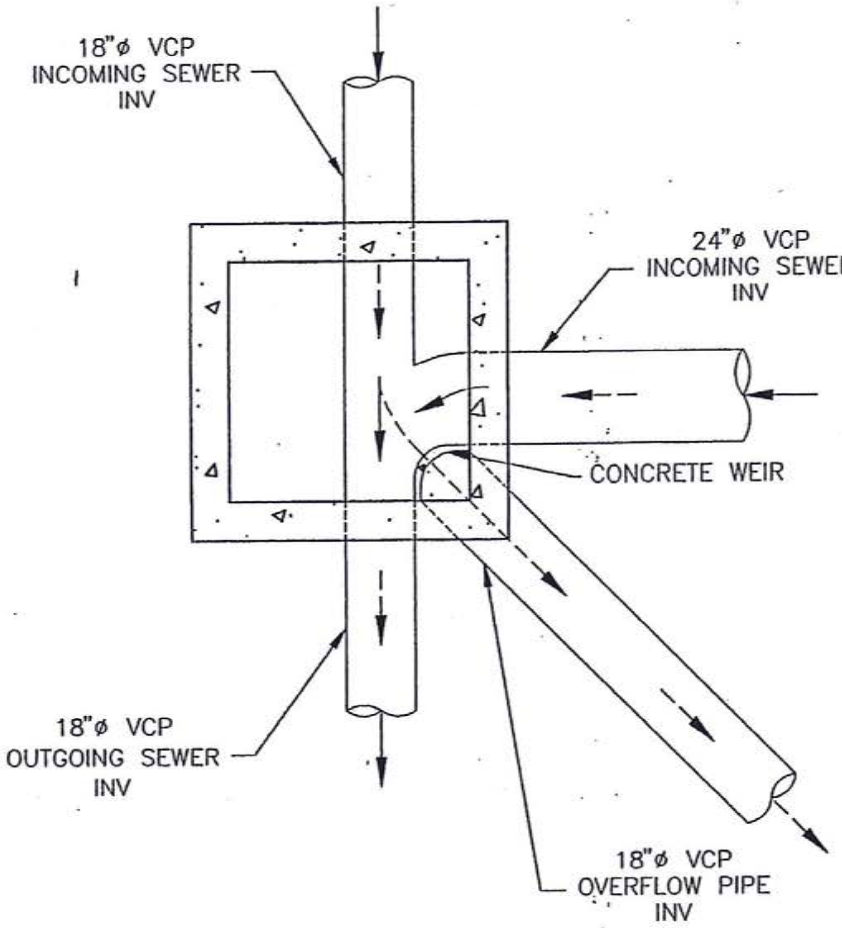
SECTION A–A

LEGEND

→ DRY WEATHER FLOW

⇢ WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–4
CROSBY AVE. & LINWOOD AVE.
DATE SHEET
Killam



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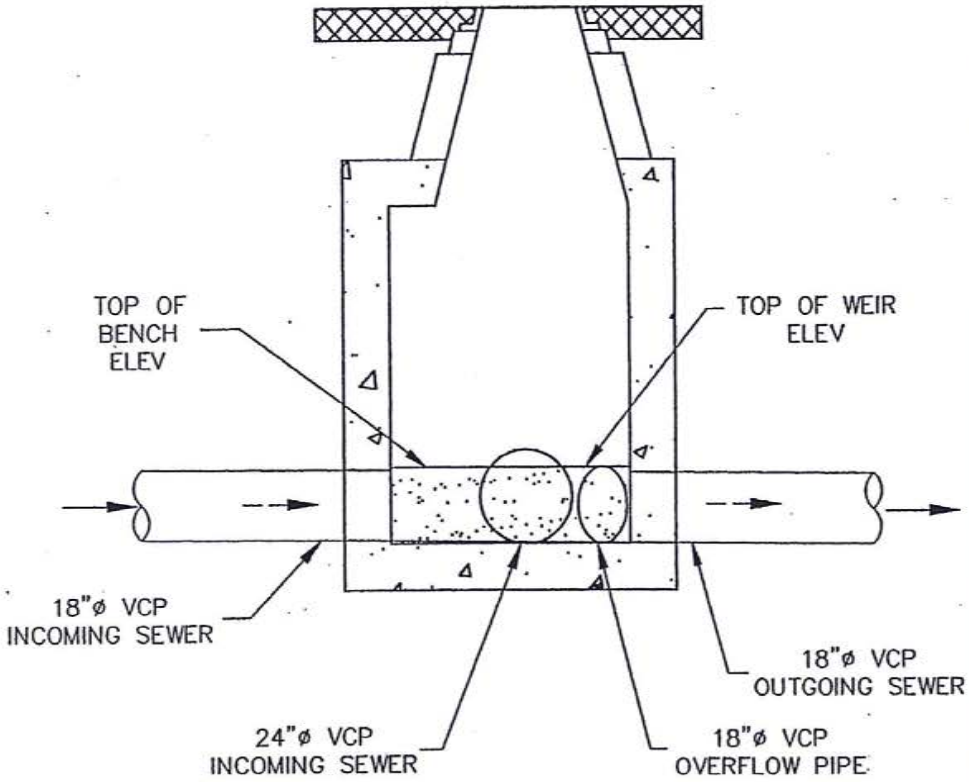


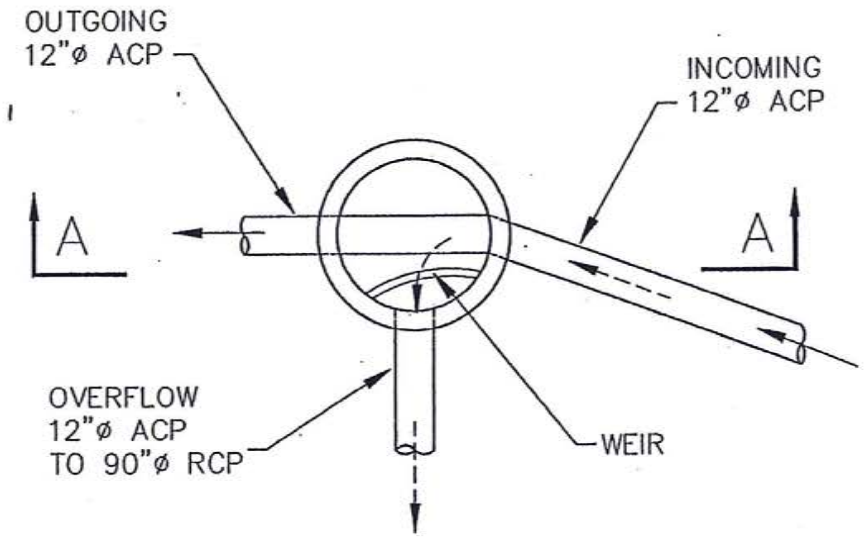
SECTION A–A

LEGEND

← DRY WEATHER FLOW

←-- WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–5
CHAMBERLAIN AVE & LINWOOD AVE
DATE SHEET
Killam



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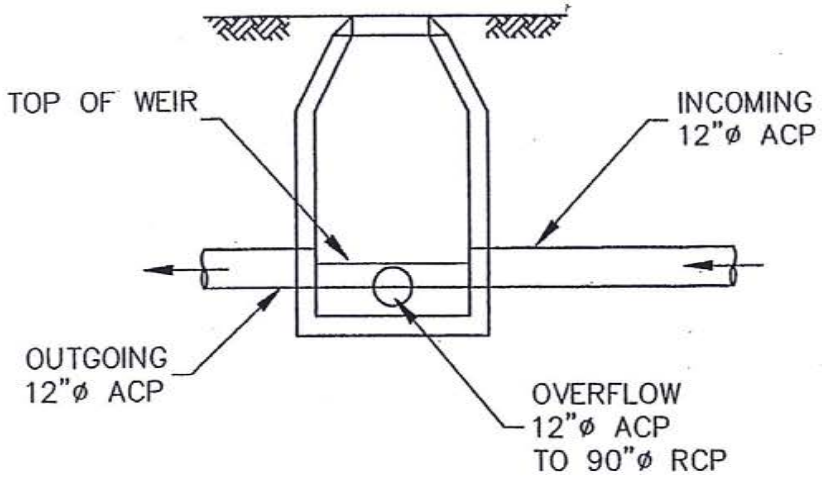


SECTION A–A

LEGEND

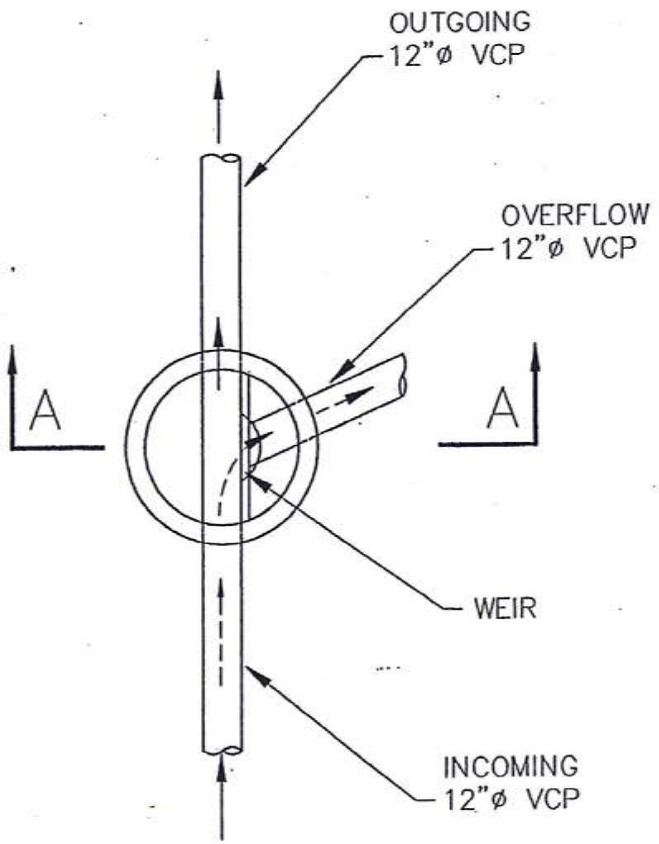
WET WEATHER FLOW

DRY WEATHER FLOW

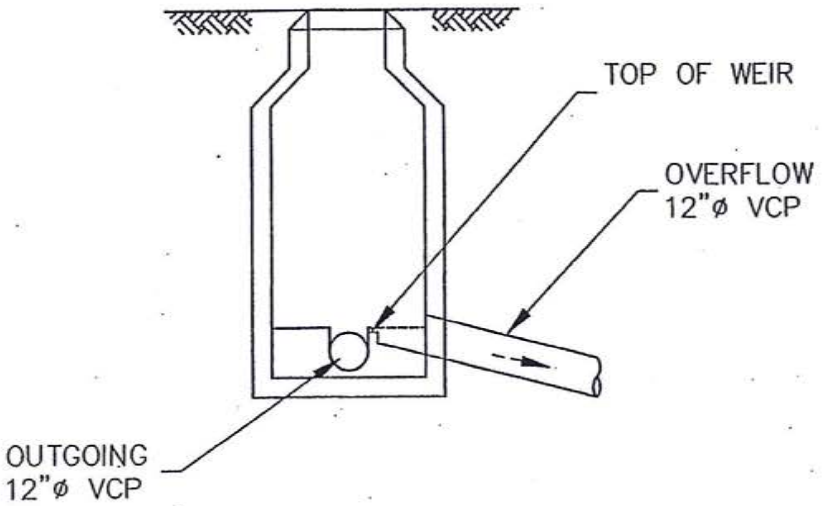
CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–6
CROSBY AVENUE

DATE SHEET

Killam



PLAN VIEW



SECTION A–A

LEGEND

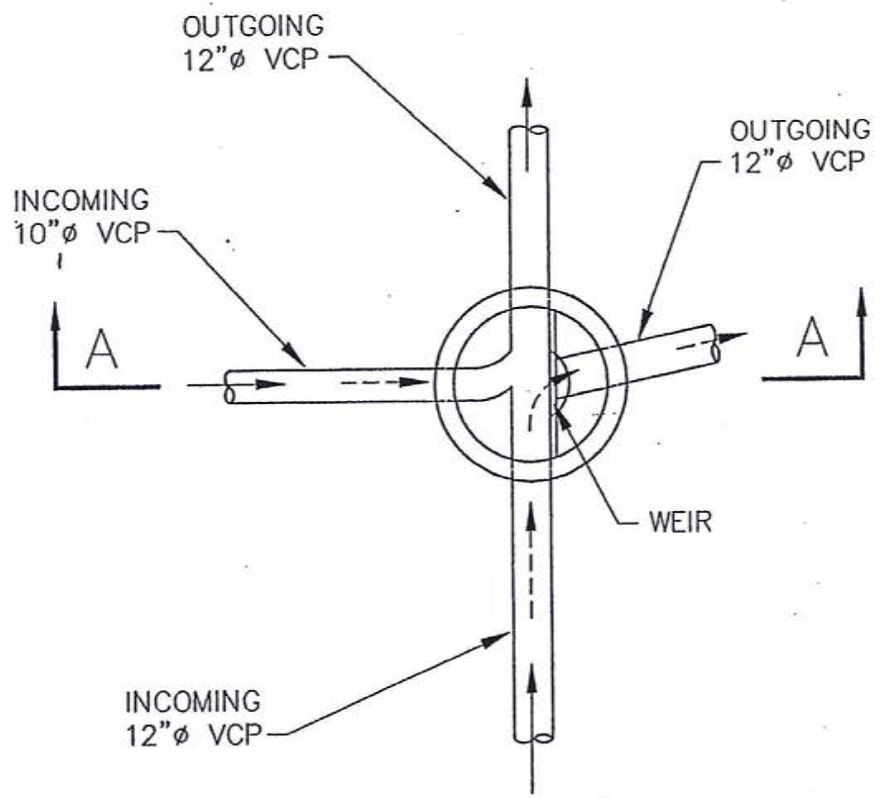
WET WEATHER FLOW

DRY WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–7
CROSBY & EMERSON

DATE SHEET

Killam



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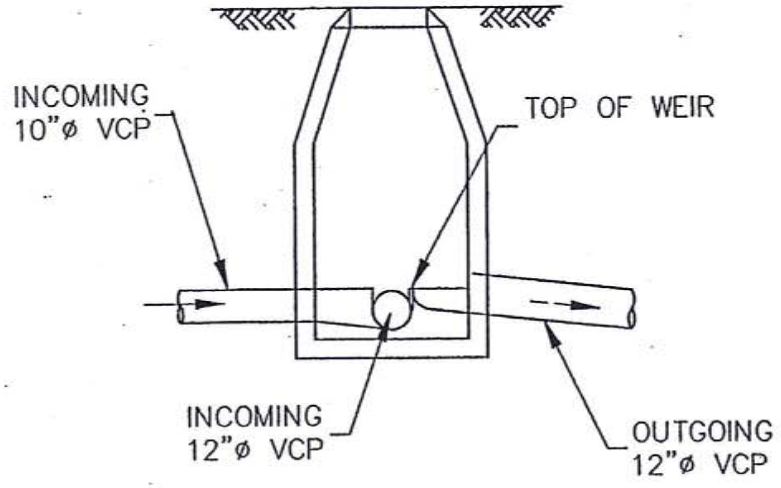


SECTION A–A

LEGEND

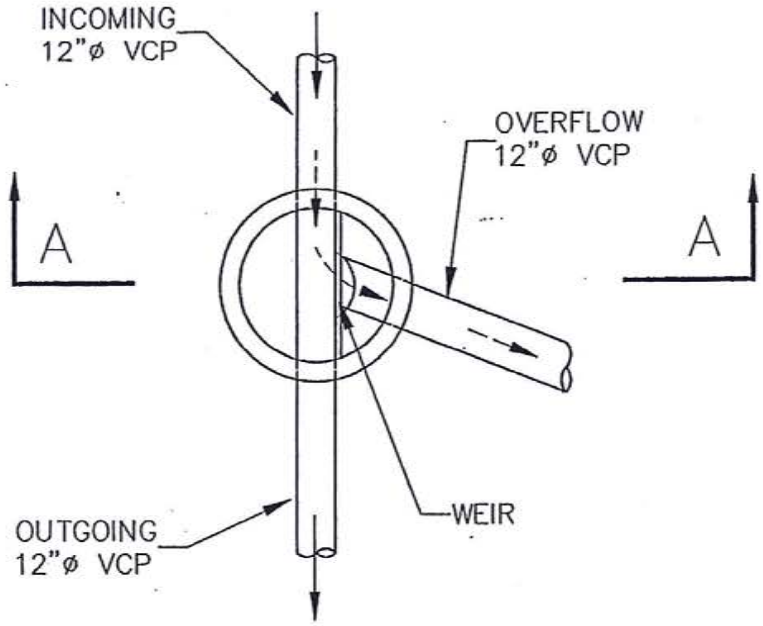
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–8
CROSBY & MAITLAND

DATE SHEET

Killam



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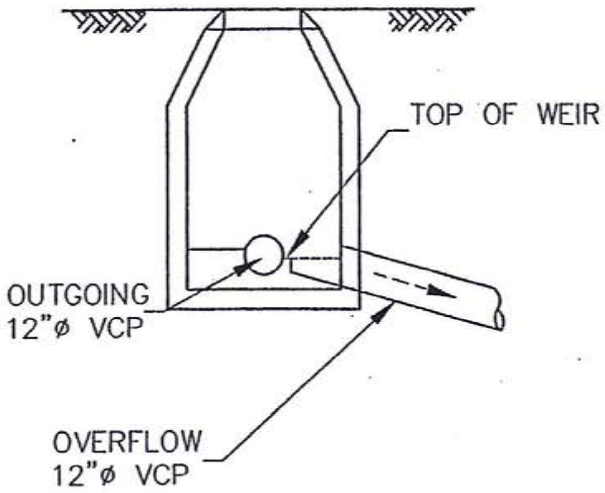

SECTION A–A

LEGEND

DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR A1–9
RICHMOND AVENUE

DATE SHEET

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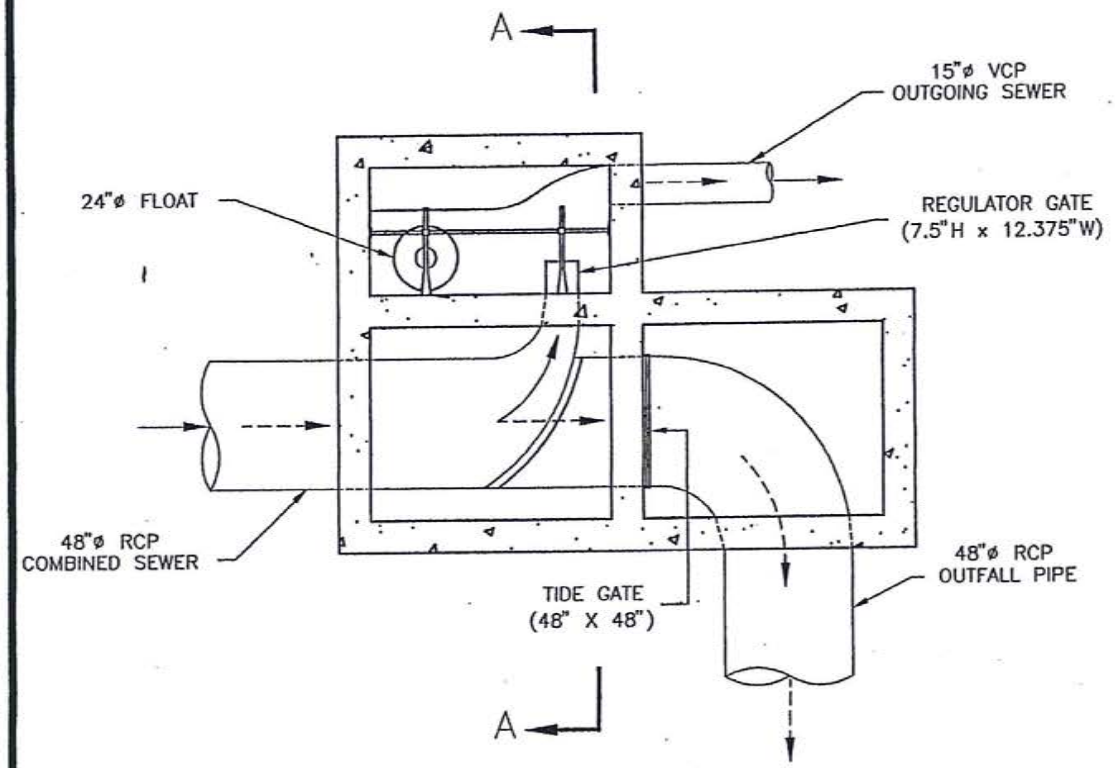

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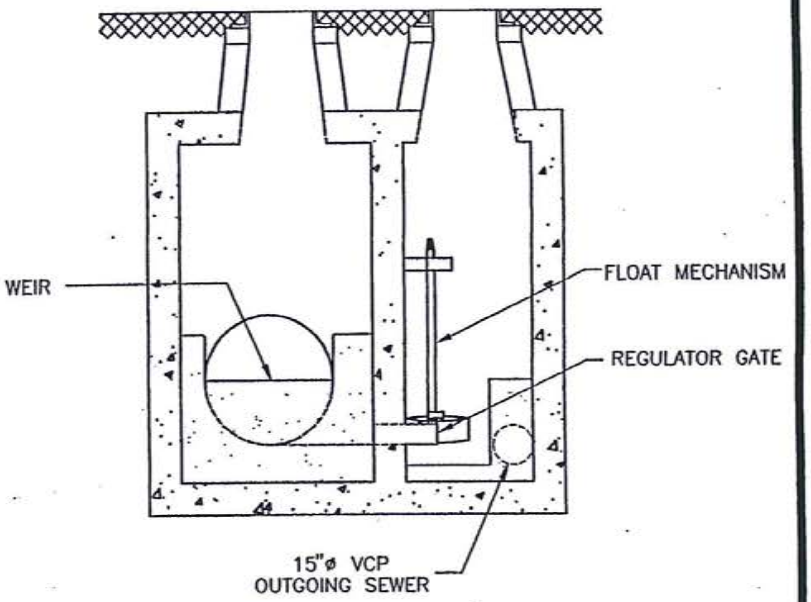


SECTION A–A

LEGEND

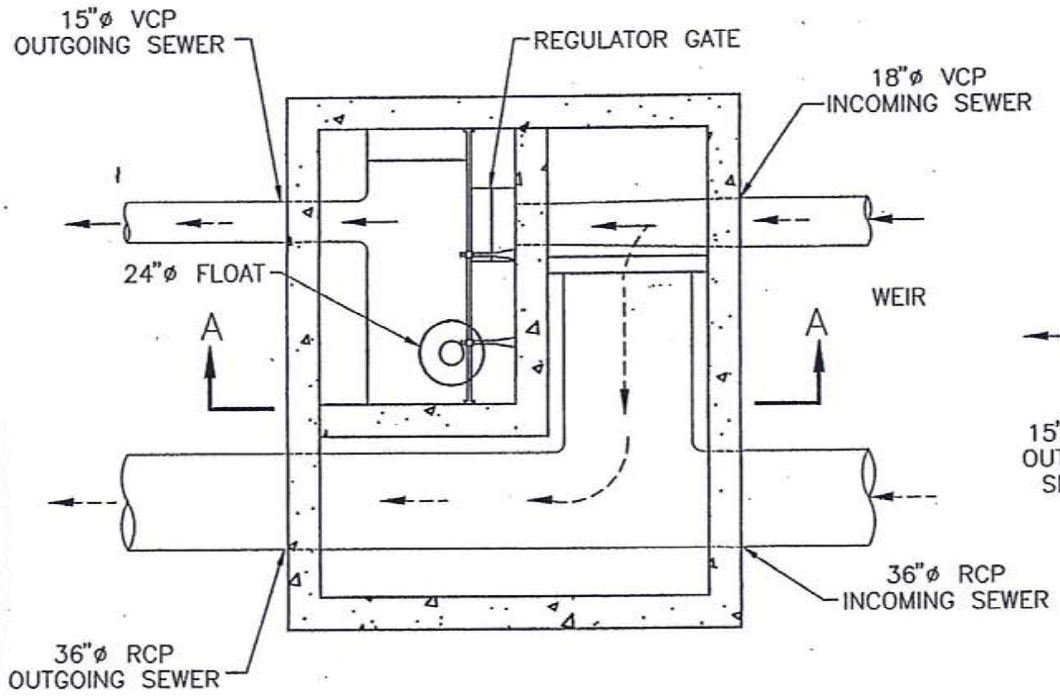
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR EF–1
LOOP ROAD

DATE SHEET

Killam



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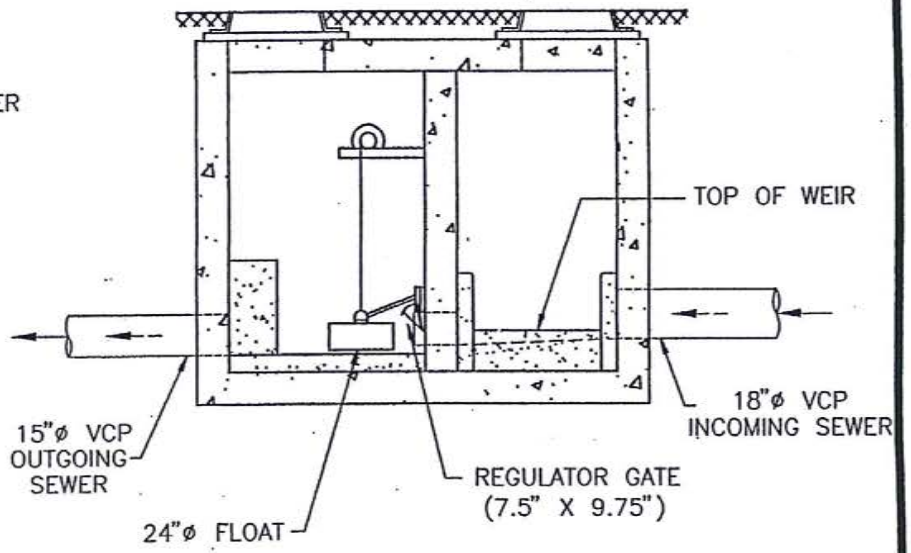


SECTION A–A

LEGEND

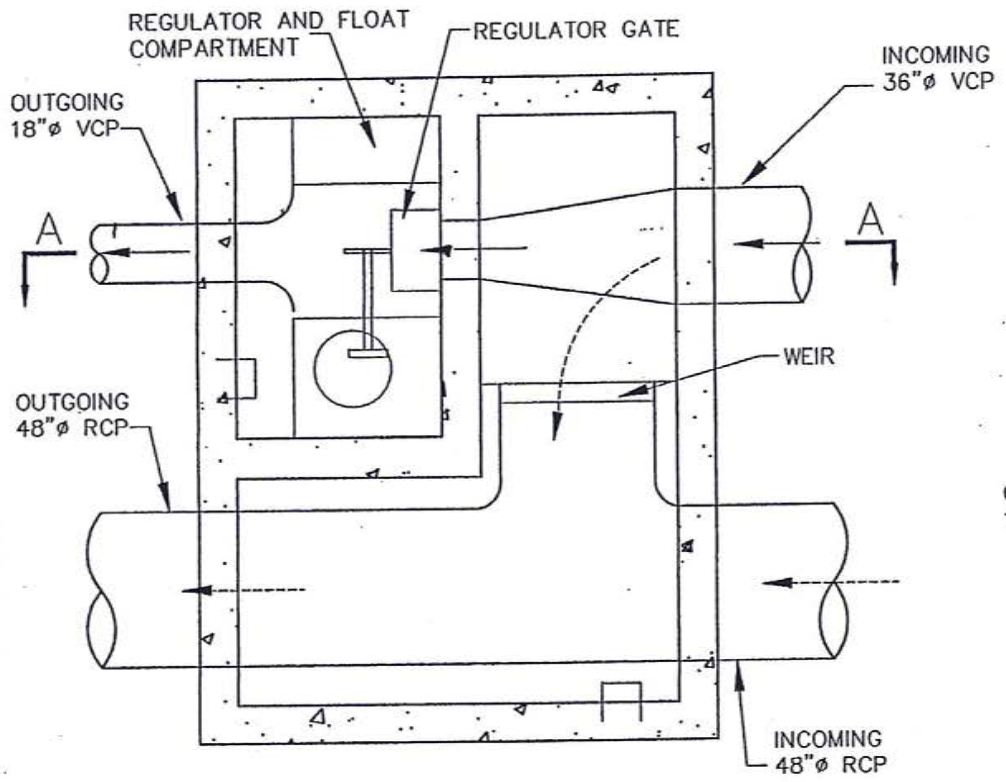
← DRY WEATHER FLOW

←--- WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR EF–2
VAN HOUTEN ST.

DATE SHEET

Killam



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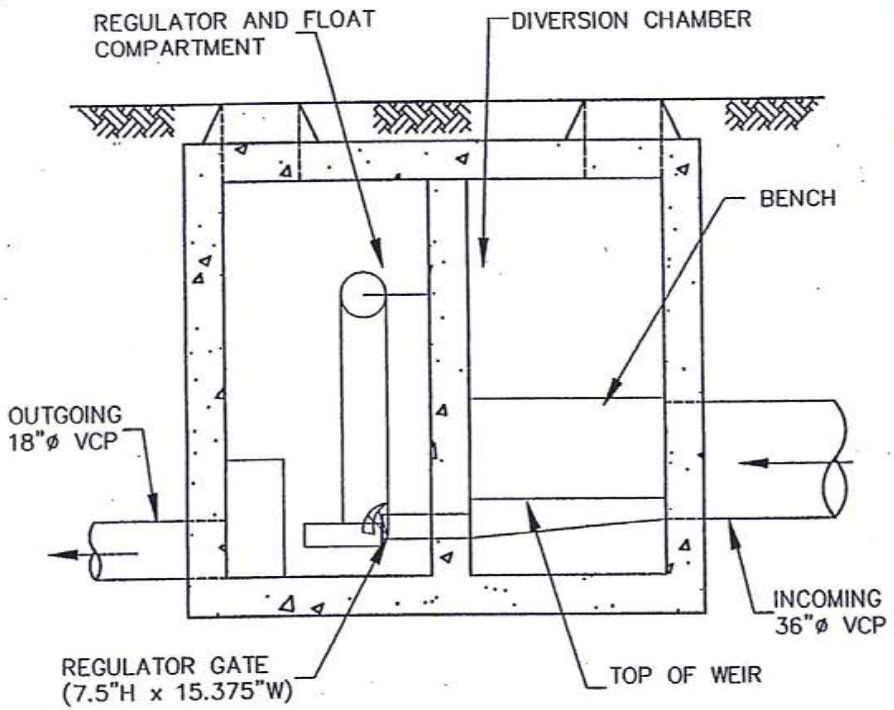


SECTION A–A

LEGEND

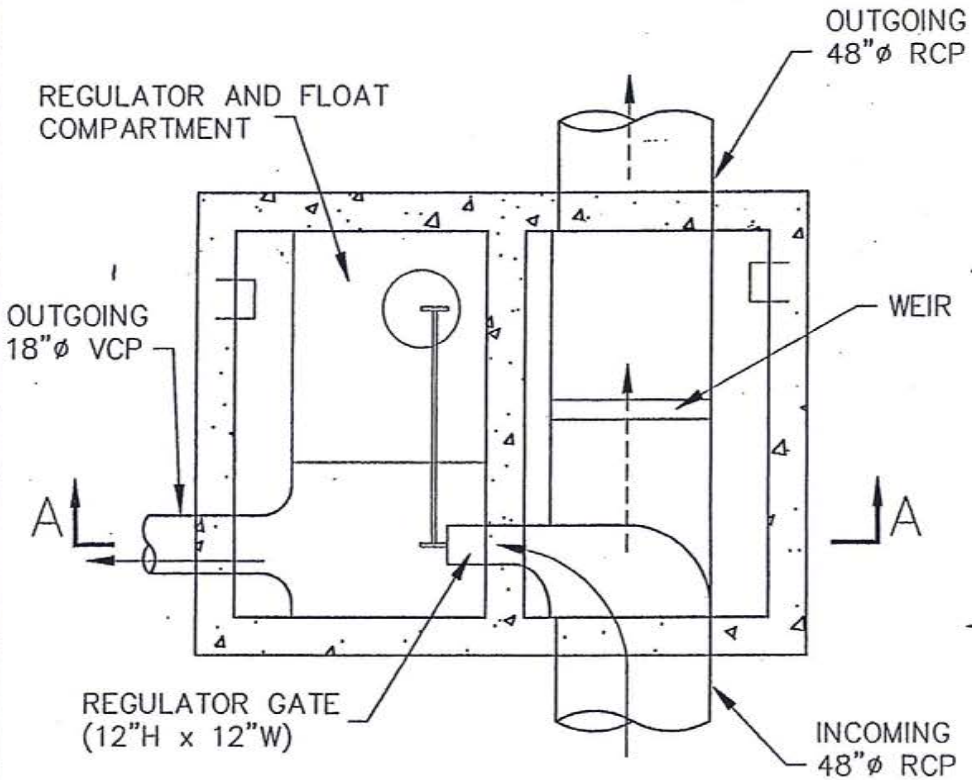
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR EF–3
ELLISON STREET

DATE SHEET

Killam



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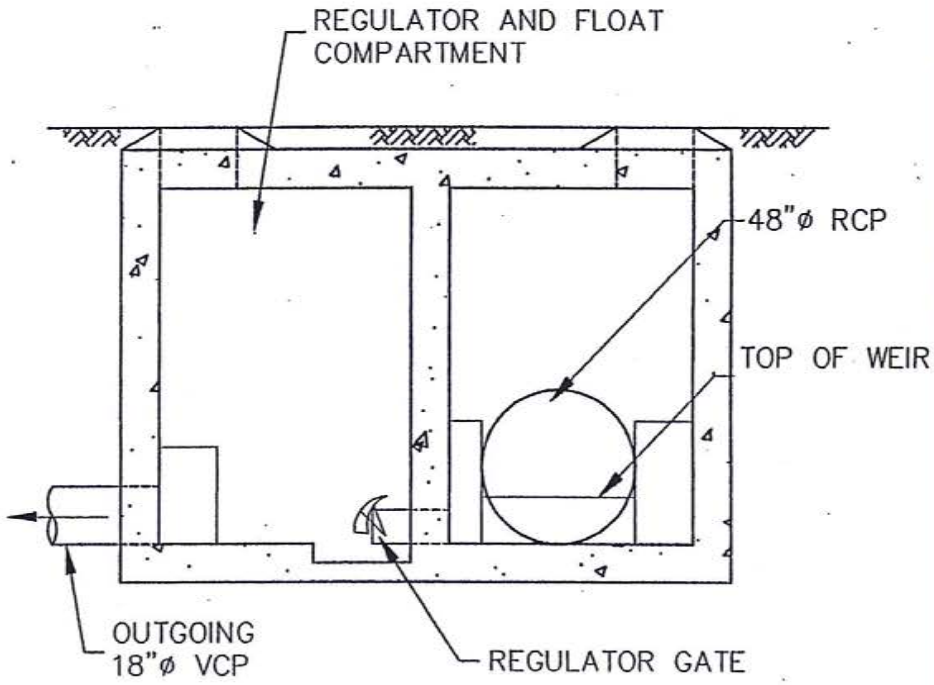


SECTION A–A

LEGEND

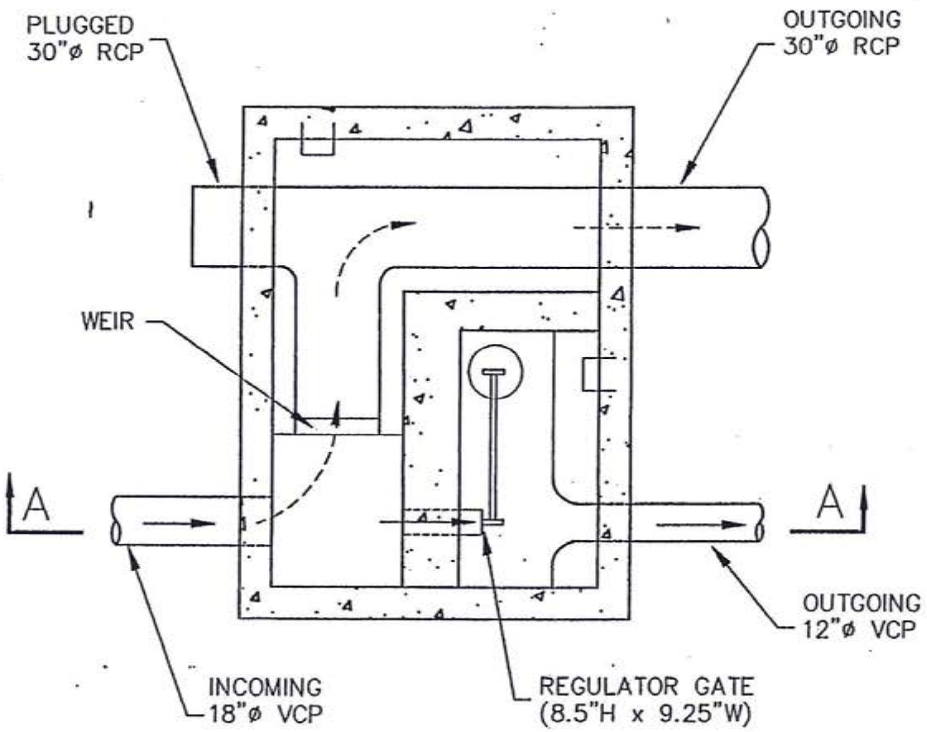
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR EF–4
MARKET STREET

DATE SHEET

Killam



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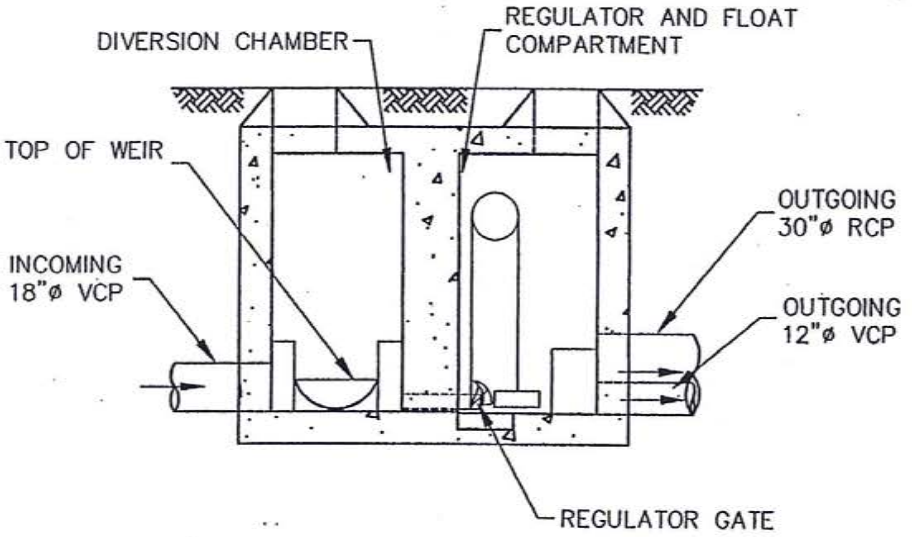


SECTION A–A

LEGEND

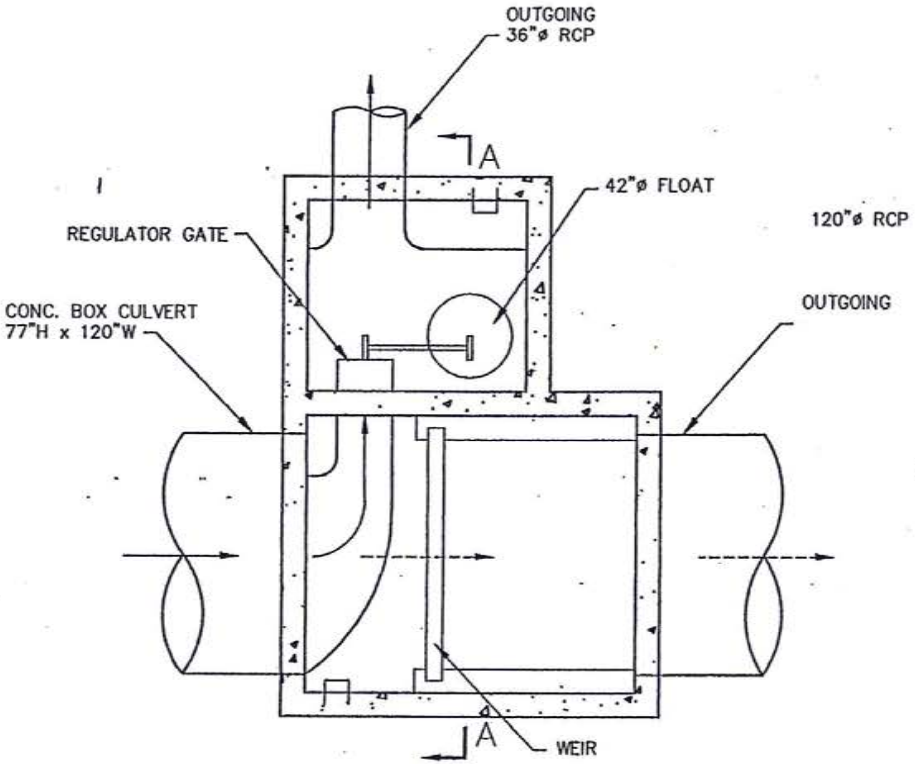
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR EF–5
MARKET STREET

DATE SHEET

Killam



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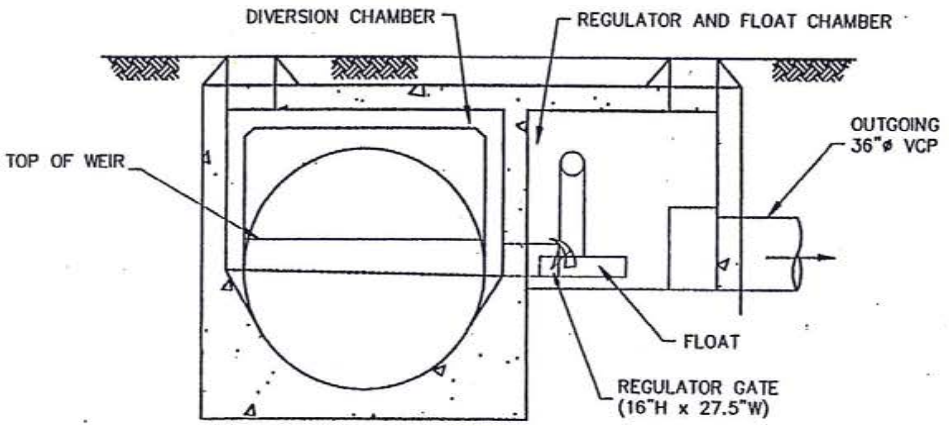


SECTION A–A

LEGEND

DRY WEATHER FLOW

WET WEATHER FLOW

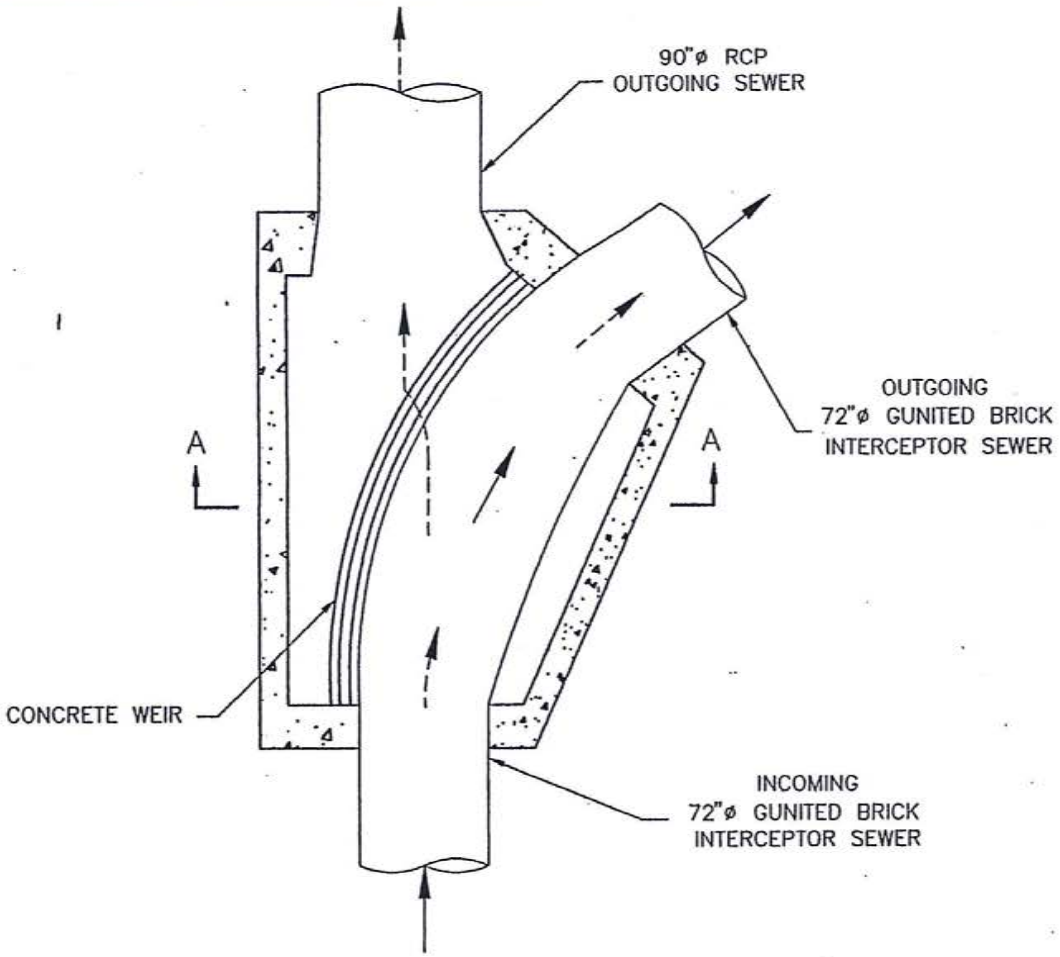
CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY

COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW

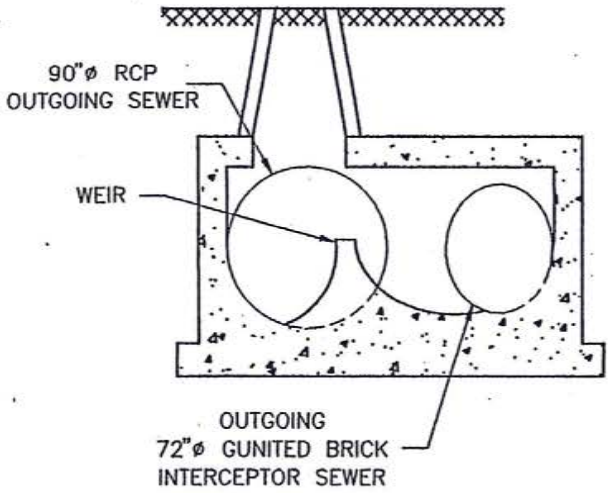
REGULATOR EF–6
RAILROAD AVE. & GRAND

DATE SHEET

Killam



PLAN VIEW



CROSS SECTION A–A

LEGEND

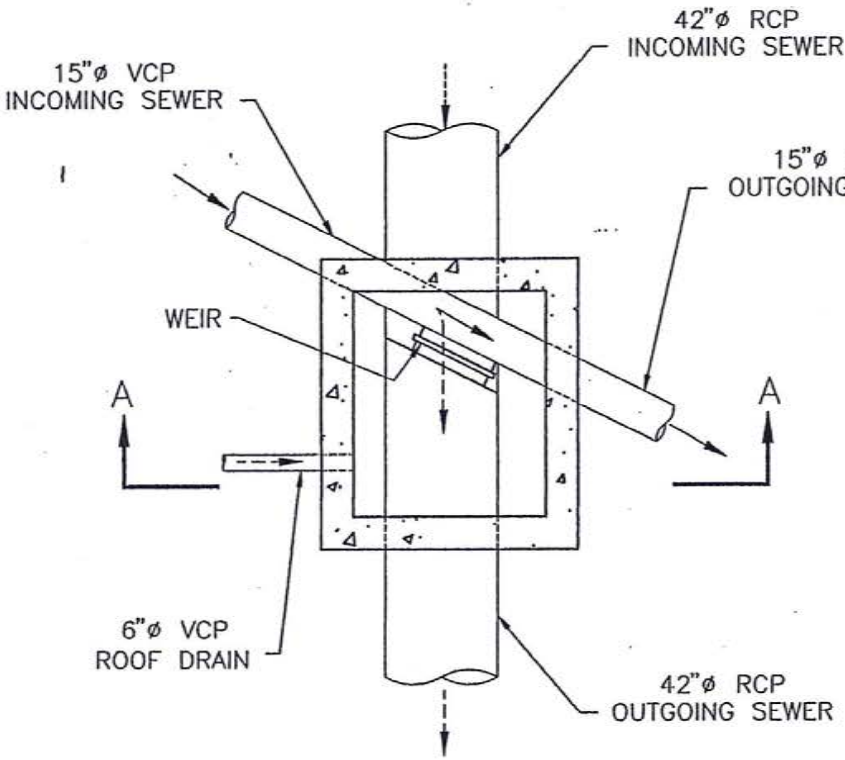
DRY WEATHER FLOW

WET WEATHER FLOW

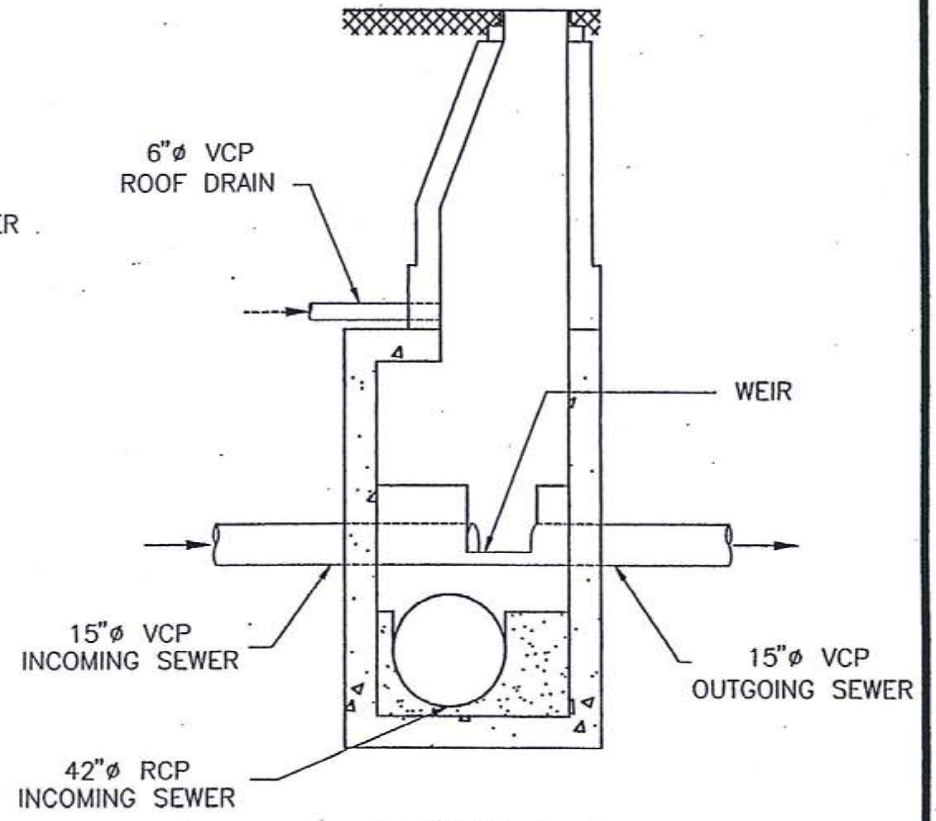
CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V2–1
19TH ST. & VREELAND AVE.

DATE SHEET

Killam



PLAN VIEW



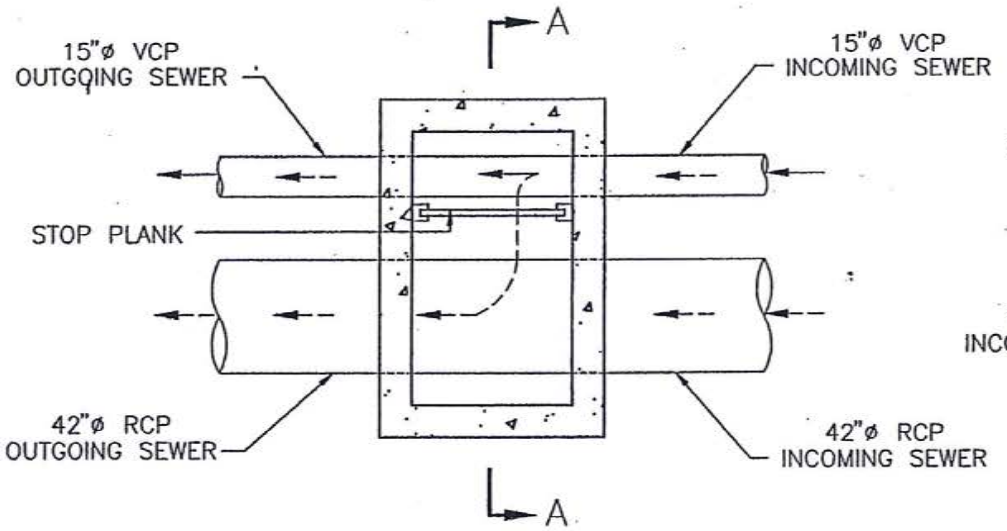
SECTION A–A

LEGEND

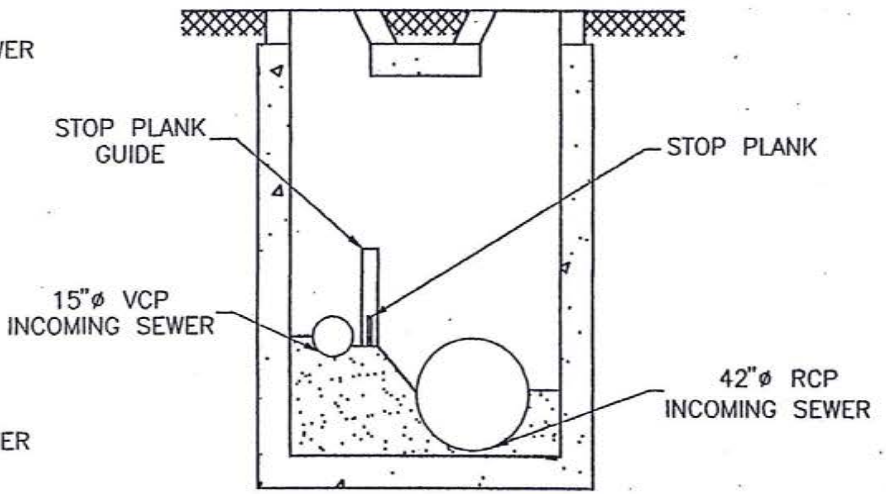
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–1
TRENTON AVE. & 23RD ST.
DATE SHEET
Killam



PLAN VIEW



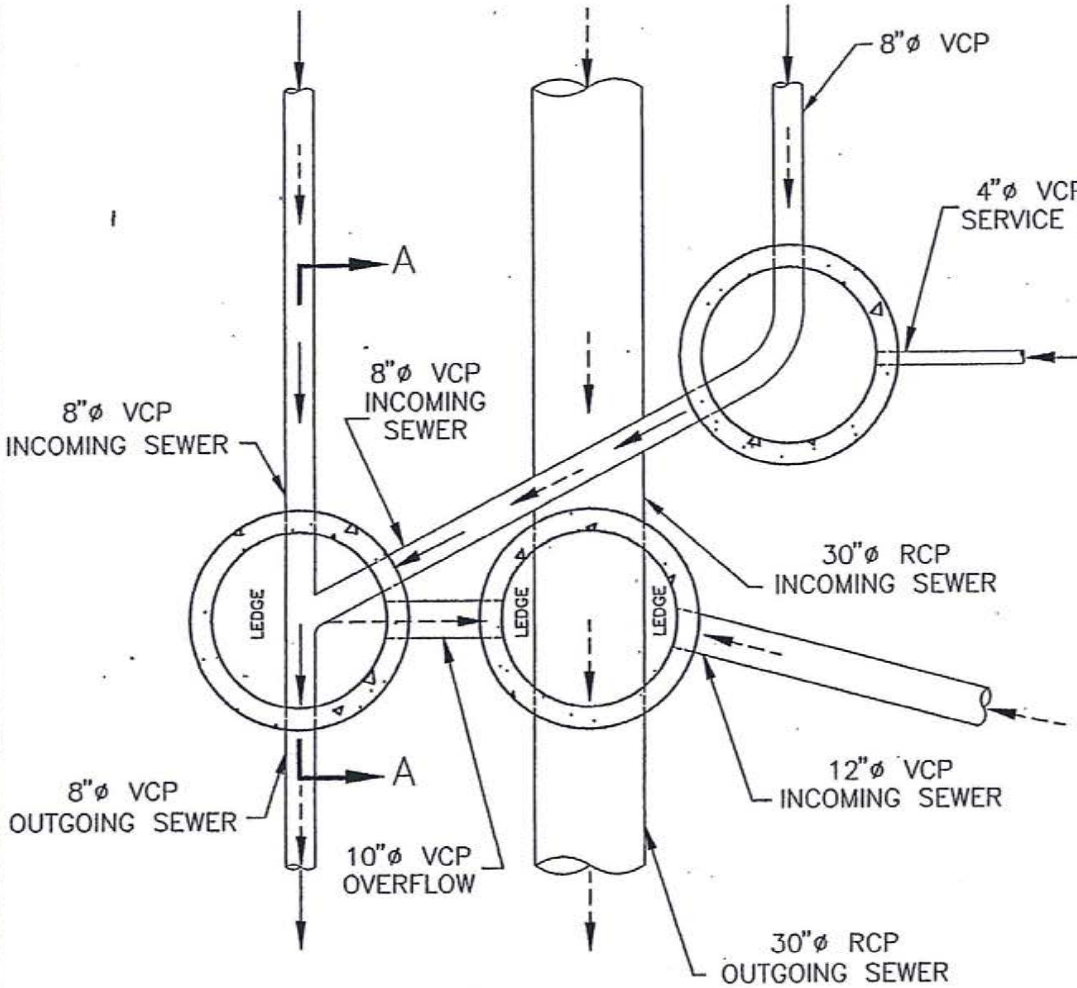
SECTION A–A

LEGEND

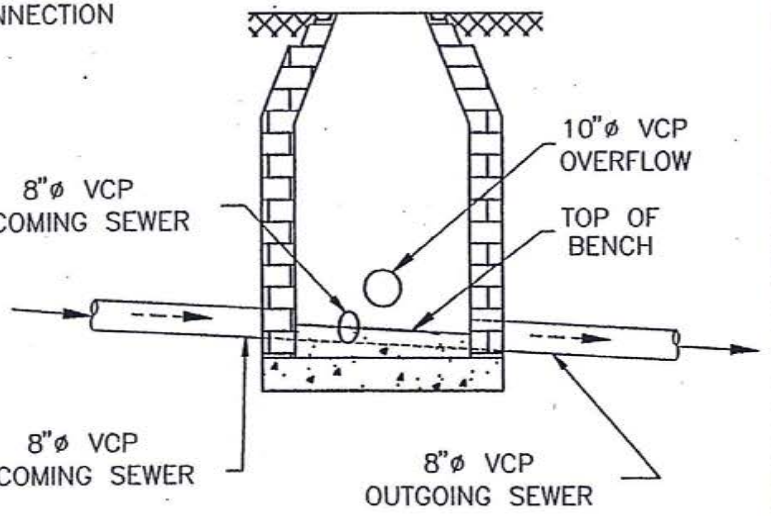
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–2
TRENTON AVE. & 22ND ST.
DATE SHEET
Killam



PLAN VIEW



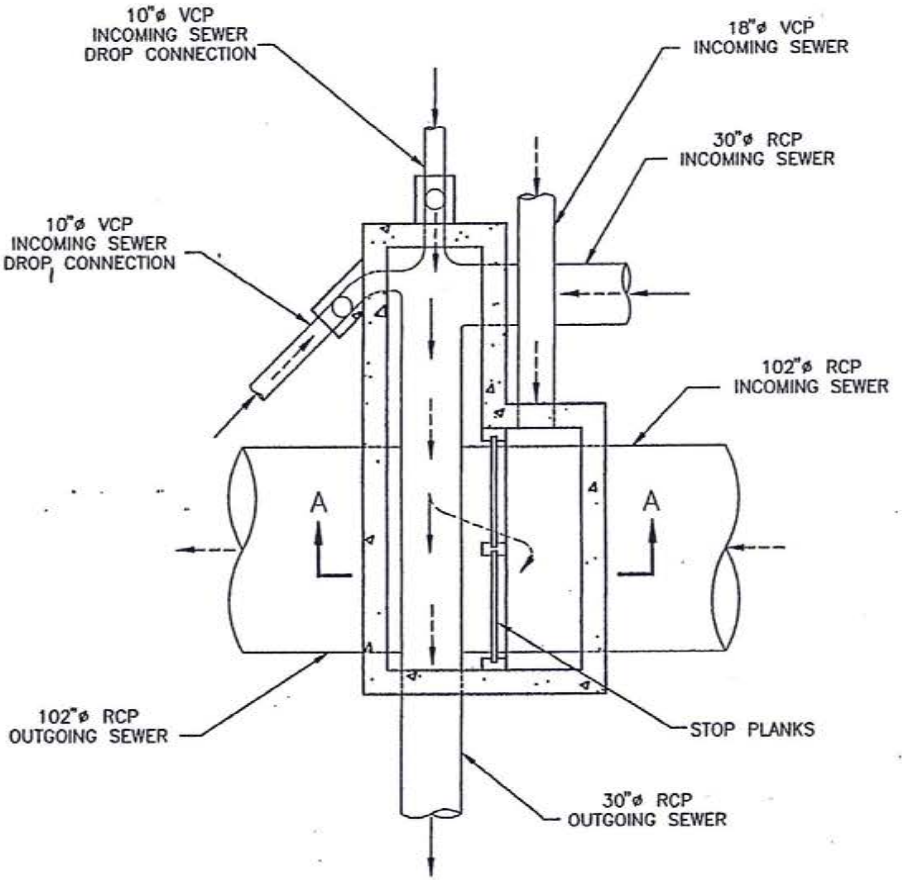
SECTION A–A

LEGEND

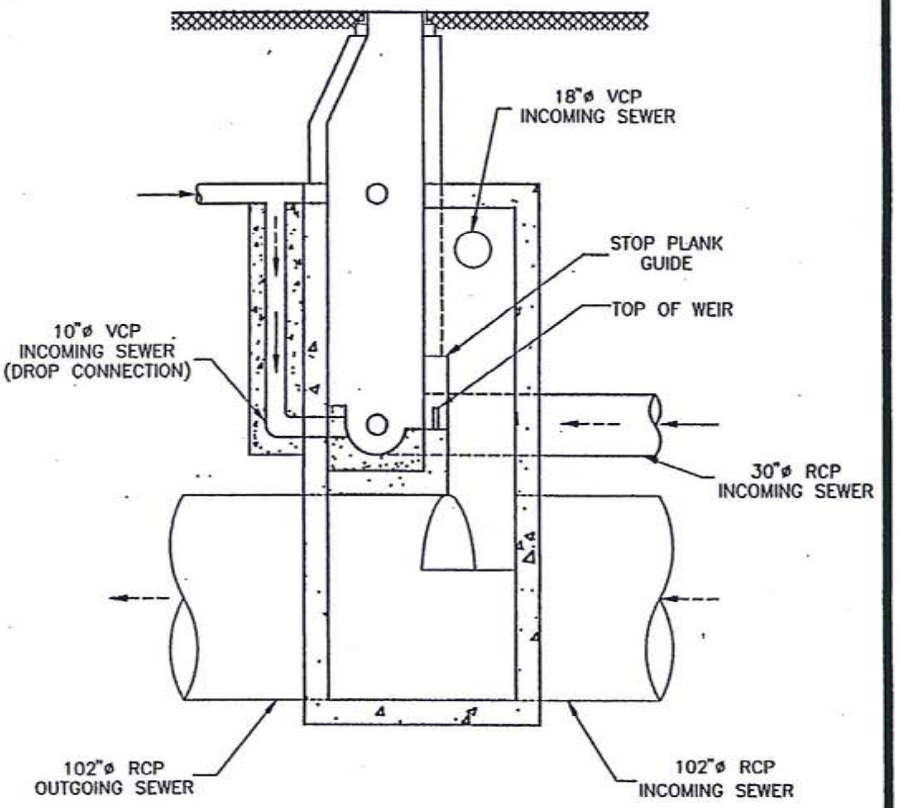
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–3
TRENTON AVENUE
DATE SHEET
IEKillam



PLAN VIEW



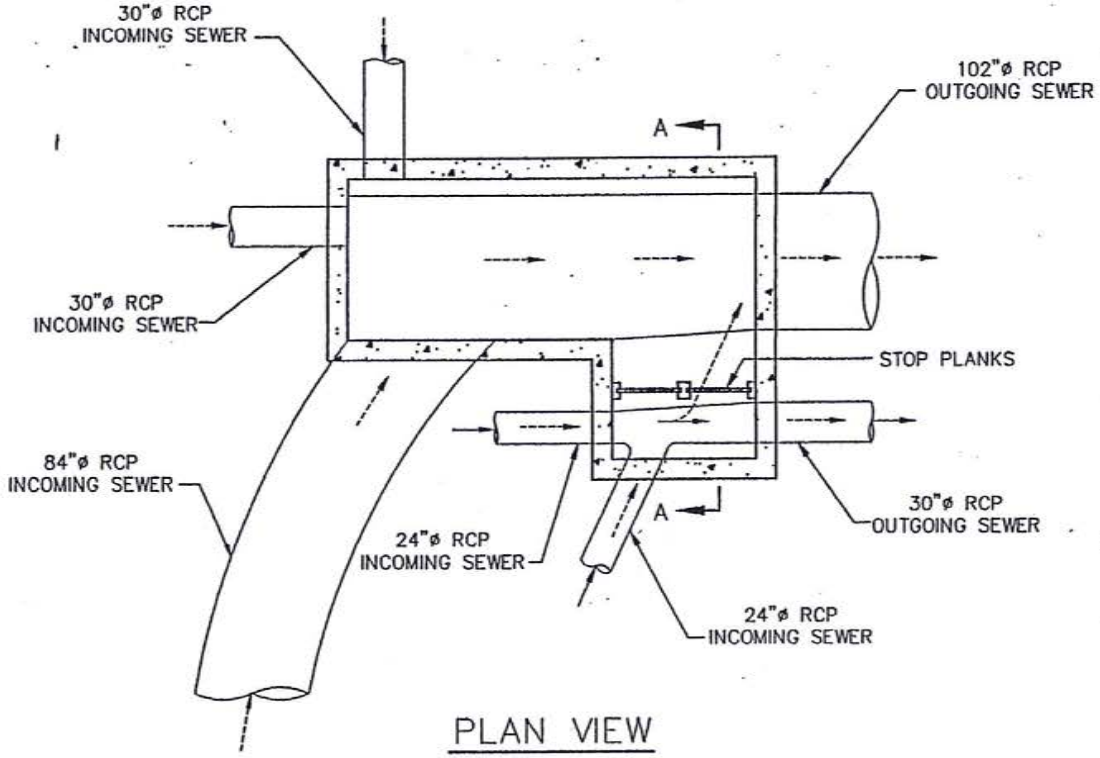
SECTION A–A

LEGEND

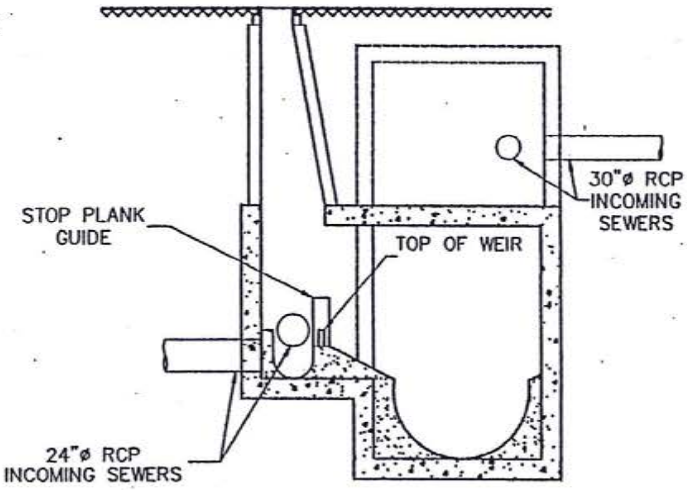
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–4
MARYLAND AVE & VERNON AVE
DATE SHEET
Killam



PLAN VIEW



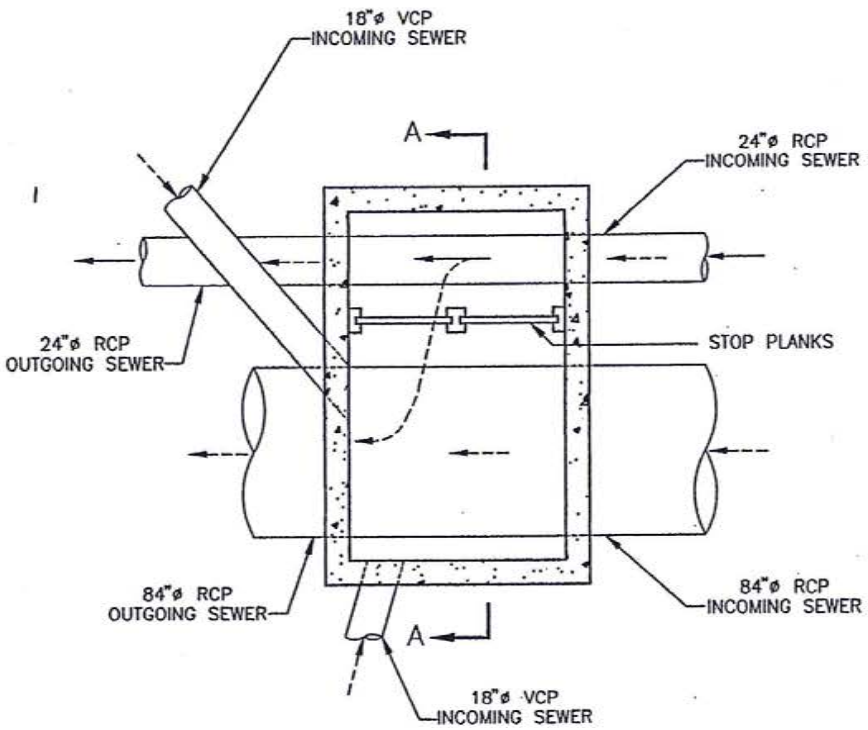
SECTION A–A

LEGEND

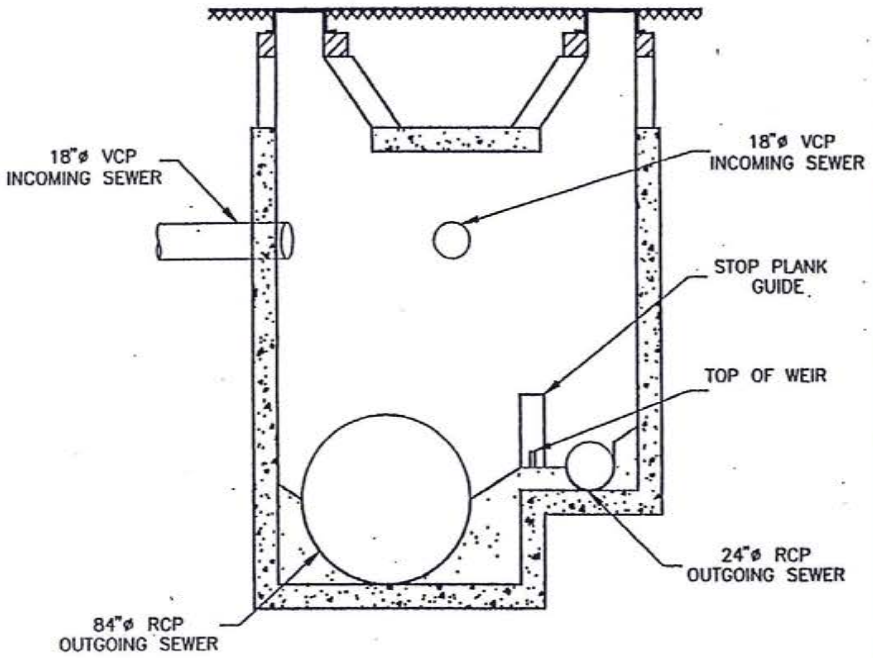
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–5
TRENTON AVE & MARYLAND AVE
DATE SHEET
Killam



PLAN VIEW



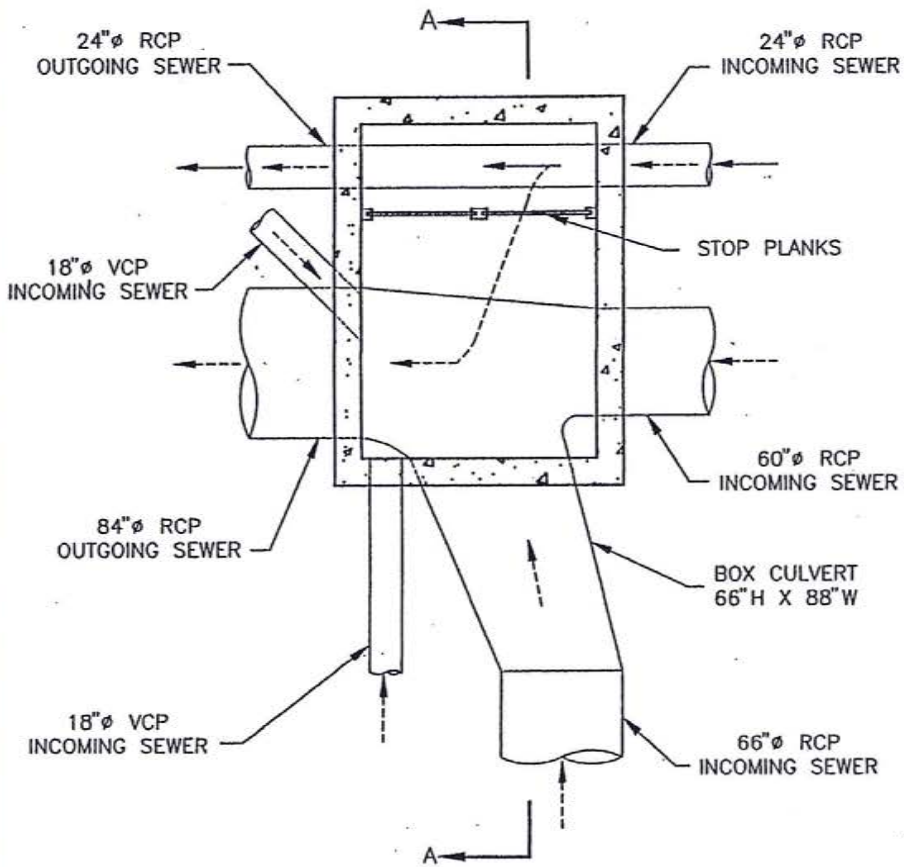
SECTION A–A

LEGEND

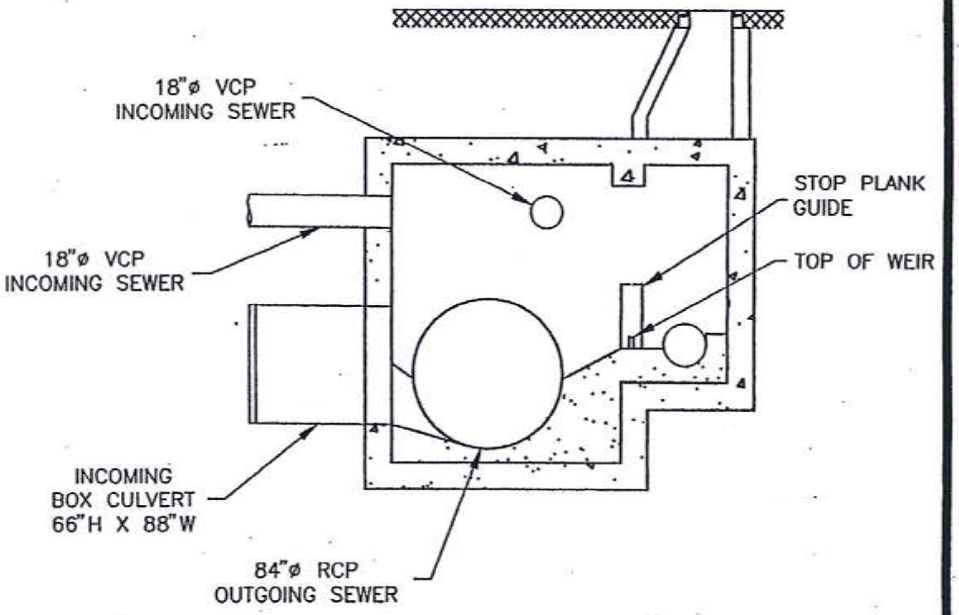
DRY WEATHER FLOW

WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–6
TRENTON AVE & FLORIDA AVE
DATE SHEET
Killam



PLAN VIEW



CROSS SECTION A–A

LEGEND

DRY WEATHER FLOW

WET WEATHER FLOW

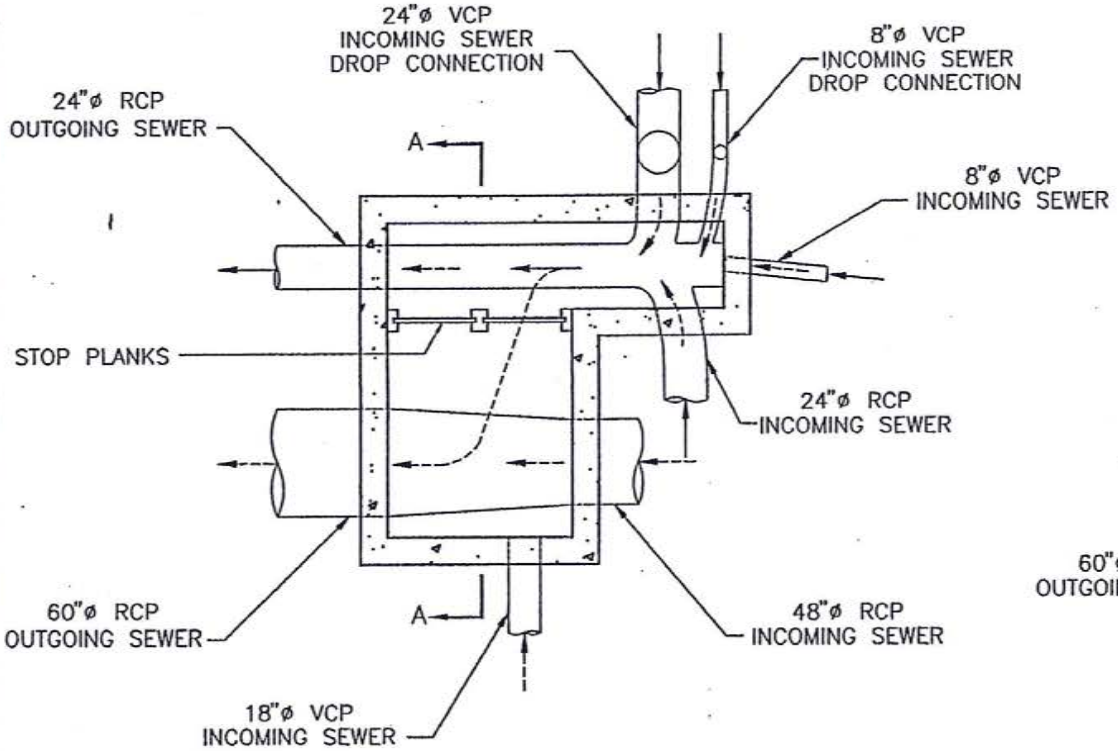
CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY

COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW

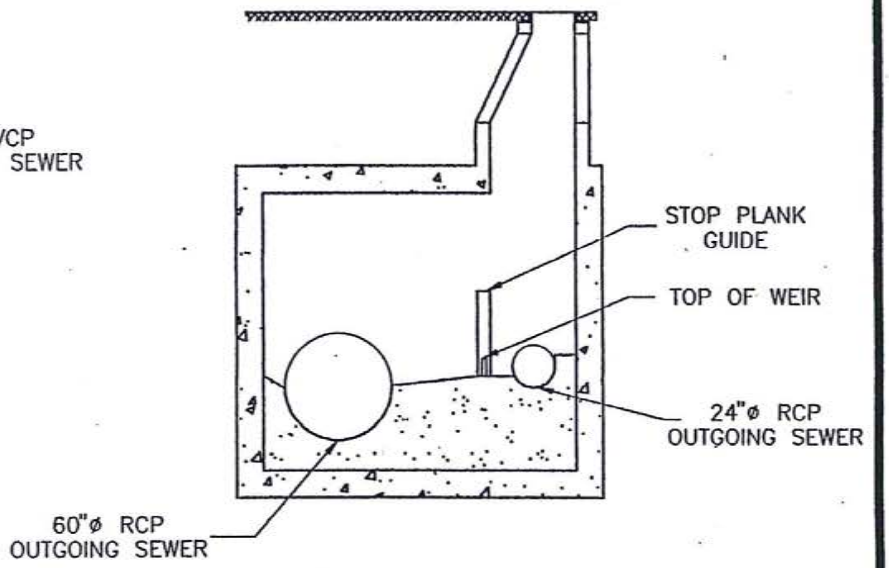
REGULATOR V1–7
TRENTON AVE & ILLINOIS AVE

DATE SHEET

Killam



PLAN VIEW



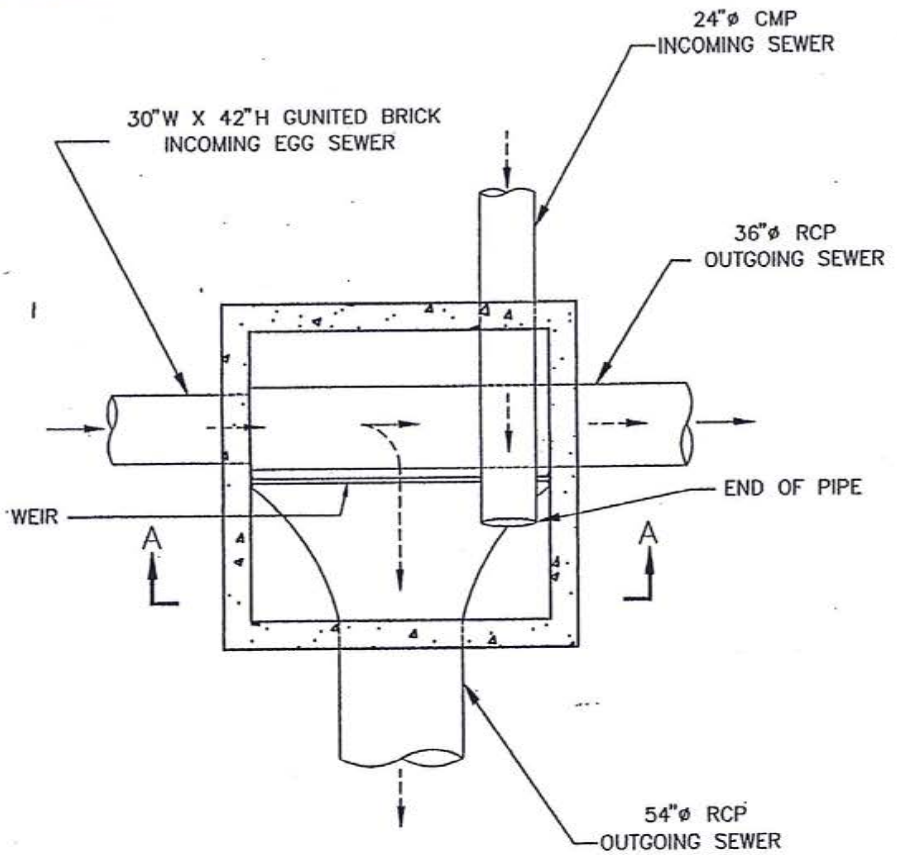
CROSS SECTION A–A

LEGEND

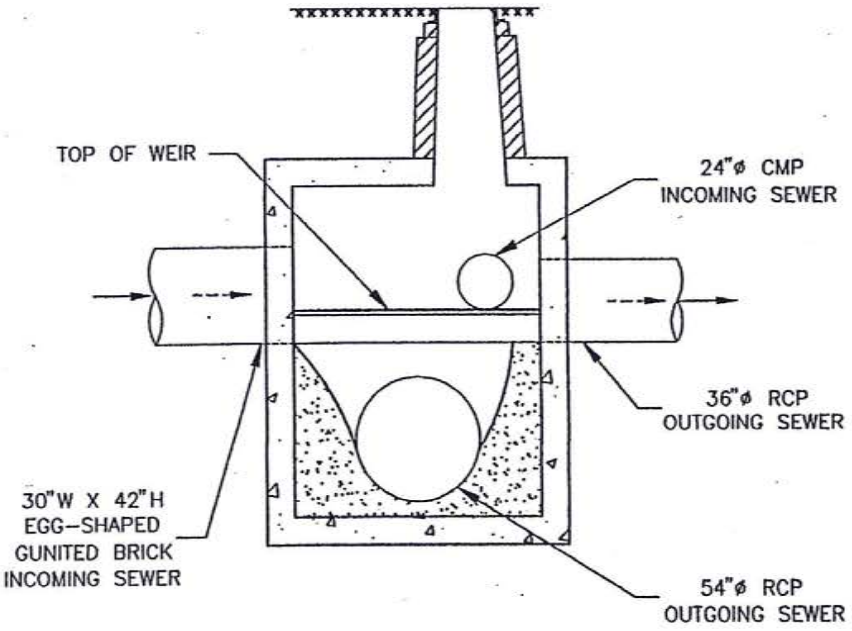
← DRY WEATHER FLOW

<--- WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–8
TRENTON AVE & MICHIGAN AVE
DATE SHEET
Killam



PLAN VIEW



SECTION A–A

LEGEND

→ DRY WEATHER FLOW

--→ WET WEATHER FLOW

CITY OF PATERSON
PASSAIC COUNTY, NEW JERSEY
COMBINED SEWER OVERFLOW STUDY
PLAN & CROSS SECTIONAL VIEW
REGULATOR V1–9
ALABAMA AVE & RAILWAY AVE
DATE SHEET
Killam